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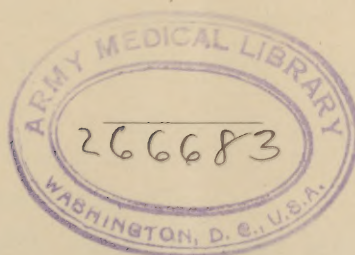
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## SYMPOSIUM ON TUBERCULOSIS\*

BY

MEMBERS OF THE STAFF OF LYMANHURST SCHOOL FOR TUBERCULOUS  
CHILDREN, MINNEAPOLIS, MINNESOTA

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\*Presented before the Hennepin County Medical Society, April 5, 1926.



# TUBERCULOUS INFECTION AMONG SCHOOL CHILDREN AS REVEALED BY THE MANTAUX TEST

BY F. E. HARRINGTON, M.D.,

AND

J. A. MYERS, M.D.

MINNEAPOLIS, MINNESOTA

(*In Abstract\**)

The incidence of tuberculous infection among school children as revealed by tuberculin tests varies a great deal according to reports made from different parts of the world. In an industrial school near Edinburgh, McNeil found 60 per cent of the boys reacted positively, while not far away in a similar school only 14 per cent reacted positively.

Our work was undertaken to determine the incidence of tuberculous infection among a group of Minneapolis school-age children. Permission was received to apply tuberculin tests to children in different parts of the city. The intradermal test was applied, beginning with 1 minim of a 1 to 1,000 solution of tuberculin. About one week later those who reacted negatively to the first test received 1 minim of a 1 to 100 solution of tuberculin. Although Mantoux advocated beginning with a solution of 1 to 5,000, and some workers begin with 1 to 10,000, we observed no severe reactions in our group of cases. Some workers have found that a few cases giving no reaction to a 1 to 100 solution will react positively to a 1 to 10 solution. We did not use tuberculin stronger than a 1 to 100 solution. Our group consists of 2,118 children. Of these 777 reacted positively to a tuberculin dilution of 1 to 1,000. There were 229 others who reacted negatively to 1 to 1,000 but positively to a 1 to 100 solution. The incidence of infection is somewhat higher among the boys than among the girls. However, the averages for the entire group show 48.76 per cent for the boys and 45.89 per cent for the girls. As age increases, the incidence of infection as indicated by the skin reaction increases with a few exceptions.

In our group of cases no attempt was made to determine which type of tubercle bacillus caused the hypersensitiveness to tuberculin.

Until recent times it was generally believed that once a person becomes infected with tubercle bacilli the hypersensitiveness to tuberculin persists throughout life; therefore it was thought

possible in any community or in any group of people with the application to all of a tuberculin skin test to determine with a high degree of accuracy the percentage who had ever been infected. However, in the light of the available evidence that tuberculous infections die out, we have come to realize the impropriety of believing that all persons reacting negatively to tuberculin have never been infected; therefore we are not able to determine by a tuberculin test how many children in a given school or persons in a given community have been infected, as we formerly believed we were. The percentage of infections that die out so completely as to leave no evidence of their previous existence, even by tuberculin testing, can be determined only by extensive studies and observations of the same groups of children over long periods of time.

## A NOTE CONCERNING THE RELATIONSHIP OF CERVICAL AND HILUM LYMPH NODES AND THYROID ENLARGEMENT IN CHILDREN AT LYMANHURST

BY C. A. MCKINLAY, M.D.

(*In Abstract\**)

No general conclusions appear to be admissible until a larger number of cases with abnormal findings is available. It appears that there is a tendency for marked cervical adenopathy to be associated with increase in the size of the thyroid, for the incidence of thyroid enlargement in individuals without definite cervical adenopathy is distinctly less than in those with it. In the group with normal thyroid glands cervical adenopathy was as frequently present as absent. However, in the children studied, definite thyroid enlargement appears to be distinctly increased in extent in the presence of cervical adenopathy. In other words, should similar proportions exist in the larger series, cervical lymph node enlargement or the factors, such as preceding oral or tonsillar infection represented by it, appear to contribute to the increase in the size of the goiter at or before the adolescent period.

That the increase in the size of the cervical and hilum lymph nodes is an expression of reaction to regional infection rather than of a lymphatic status is indicated by absence of any correlation between the size of the two groups of nodes. That such preceding infection is more

\*This paper was published in full in the American Review of Tuberculosis, October, 1926.

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frequently tuberculous in the hilum than in the cervical region is indicated by increased frequency of positive von Pirquet tests in cases with hilum node enlargement. In fact, positive von Pirquet tests were more frequently found in children without cervical node enlargement than in those with it.

As might be anticipated, positive von Pirquet tests were as frequently present in children with as in those without thyroid enlargement.

### BLOOD CHEMISTRY CHANGES PRODUCED BY EXPOSURE TO THE ALPINE LAMP

By E. M. GREISHEIMER, M.D.

AND

A. W. ARNOLD, M.D.

(*In Abstract\**)

These studies were carried out on school children between the ages of ten and sixteen years. Eight boys served as controls, receiving no treatment during the course of the investigation. The experimental group consisted of eight girls who received lamp treatments after a six weeks period of observation.

Samples were drawn just before lunch. Heparin was used to keep the blood from clotting. The calcium content of the plasma was determined by a modification of the Tisdall method, and the total acid-soluble phosphorus by a modification of the Bell-Doisy method. The herapin was analyzed for calcium and phosphorus by the same methods.

The boys showed an average of 9.85 mgs. of Ca. per 100 c.c. of plasma during the first six weeks. During the second period of study, the average was 10.94 mgs., showing an increase of 1.09 mgs. without any treatment. The girls showed 9.76 mgs. of Ca. during the six weeks of preliminary observation. The lamp treatments were then started and during the next twelve weeks the calcium content rose to 10.75 mgs., an increase of 0.99 mgs. Certainly lamp exposure in these cases of masked juvenile tuberculosis did not increase the calcium content of the plasma since a similar change occurred in the control cases.

The total acid soluble phosphorus of the boys decreased from 15.47 mgs. during the first period to 14.5 mgs. during the second. In the girls the phosphorus decreased from 13.57 mgs. during

the first period to 13.36 mgs. during the treatment period. Again, it would seem that lamp exposures produced no change in the acid-soluble phosphorus in masked juvenile tuberculosis.

### THE AUTO-URINE TEST IN THE DIAGNOSIS OF ACTIVE TUBERCULOSIS

By MARY H. JENNINGS, M.D.

The ever-present subject of tuberculosis and the great difficulty in diagnosing early juvenile tuberculosis in its various forms are responsible for a vast amount of study and research to find out, if possible, some means or special laboratory test whereby this difficulty can be overcome. Most of these tests have been various modifications of the tuberculin skin test. These have held the field for a time only to be discarded, until now the intracutaneous method of injecting tuberculin most commonly practiced is really an aid merely in detecting tuberculous infection, but not tuberculosis disease.

Wildbolz, in 1919, announced the auto-urine test by which he believed it possible to demonstrate the activity of a tuberculous process through the presence of an antigen of tuberculous nature in the human urine by means of an allergy reaction of the skin. He used the intracutaneous skin test to demonstrate tuberculous antigen in the urine. In his first experiments he used unconcentrated urine with negative results. He then used morning urine, concentrating the same to one-tenth of the original volume by heating the urine in vacuum at 65°-70°C. Then he filtered the concentrated urine through filter paper previously treated with 2 per cent carbolic acid. He injected the specimen (filtered concentrated urine) intracutaneously. At the same time he injected 1-1,000 and 1-10,000 old tuberculin to detect the anergic individual. He tried the same test on patients suffering from appendicitis, syphilis, typhoid fever, and leprosy. His results in the latter were all negative except in the cases of leprosy. By this auto-urine test, Wildbolz believed it to be a specific proof of early activity in tuberculous patients.

Eliasberg and Schiff, 1920, using Wildbolz technic, tried the test on forty children with negative results throughout. They found that they got negative results even if positive urines (patients suffering from active tuberculosis) were injected.

Gramen, 1920, tried the test on fifty cases, as well as several healthy individuals. He got positive reaction in both healed and healthy cases,

\*This paper was published in full in the American Review of Tuberculosis, October, 1926.



while half of the healed surgical cases were questionably positive or negative.

Von Bergen, 1921, reported a specific body present in the urine which was resistant to heat, partly dialyzable, alcohol soluble, biuret free substance belonging to the tuberculin group. He found that urine heated to 120°C. for one-half hour did not change the antigen, but rather gave a stronger reaction when heated. This, however, has not been proven by any other authority.

Bezancon, 1921, found great difficulty in reading his reactions, as he got varied reactions with urine from the same patient but taken at different times during the day.

Bosch, 1921, ran a series of 220 cases. His series consisted of surgical, lung, bone, and 92 non-tuberculous individuals. His results were as follows:

- 56 cases with tuberculosis of bones and joints gave positive readings.
- 12 cases with tuberculosis of bones and joints gave questionably positive readings.
- 5 cases with tuberculosis of bones and joints gave questionably positive readings.
- 2 cases with tuberculosis of bones and joints gave negative readings after surgery.

He also found the Mantoux reaction to be stronger in early cases no matter what the type, thus proving Wildbolz' original theory that the auto-urine test is diagnostic of early active tuberculosis.

Schneid, 1921, ran a series of 150 cases by which he proved that the auto-urine test is valuable for active tuberculosis. Repeated tests and injections are necessary in negative cases. He proved that one must prevent necrosis at the site of injection by removing the concentrated salts from the urine before injecting.

Cepulic, 1921, reported unusual findings which to date have not been noted by any other worker. Twenty-four hours after injection of the concentrated urine he noticed in his patients marked uneasiness, headache, general exhaustion, and increase in focal reaction as evidenced by physical signs, coughs, and slight hemoptysis for two days. He obtained no reaction, however, at the point of injection. In his control cases he got no reaction whatever. He also found that concentrated sterile urine kept two to three weeks at ordinary room temperature.

Farago and Randt, 1921, in a series of 100 cases found positive readings in healthy individuals.

Alexander, 1921, found that negative tests do not exclude active tuberculosis, while positive results mean an active process. He found that

with urine heated to 100°C. or above, a weaker reaction results as against Von Bergen's findings in which he heated the urine to 120°C. and believed that he got stronger reactions.

Gibson and Carroll, 1921, ran a series of forty cases and corroborated to such an extent the findings of Wildbolz that in 1922 it was instituted as a regular routine at the Meridian (Conn.) Tuberculosis Sanatorium. Their later series consisted of 105 children. They found that the test was of value in establishing a definite diagnosis of active tuberculosis in certain cases and of marked assistance in ruling out non-tuberculous conditions. They obtained positive findings in 98 per cent of their active tuberculous conditions. Their conclusions were that the test was of exceptional value in early or masked lesions in children. The test brought to light six cases not definitely diagnosed at the time.

Enright and Rettger, 1924, using the same technic as Wildbolz, ran a series of 103 cases. As controls they used 1-1,000 old tuberculin, concentrated normal urine and saline. They obtained the following results, non-specific reaction in two to four hours which rarely persisted after forty-eight hours, while in the auto-urine test the reaction would last three to fourteen days. They established the following readings, 3 mm.+, 5 mm. ++, 7 mm. +++, and less than 3 mm. of induration and redness as questionable. The results of their cases were:

29 far	21	25	18
advanced	moderate	borderline	normal
3=+++	2=+++	2=+++	0=+++
12=++	12=++	7=++	0=++
5=+	8=+	2=+	1=+
0=ques.	5=ques.	4=ques.	1=ques.
0=neg.	5=neg.	10=neg.	16=neg.

They repeated the series of borderline cases and obtained positive findings in 11 of the 25 cases after one to two months.

Ornstein and Steinbach, 1924, rid the urine of the salts. They used Zinsser's method of obtaining the nucleoproteins and proteose fractions of tuberculin. They found the skin reaction due to these two groups. To one volume of urine they used ten volumes of 95 per cent alcohol after ridding the specimen previously of the soluble albumins by heat and acetic acid and filtering. In this alcohol-treated specimen the alcohol was redissolved in normal saline to its original volume, then filtered and injected. For their first series they used guinea-pigs. Their results were as follows: skin reaction at the site of injection only with tuberculin in tuberculous pigs; no re-



action in normal pigs. They then tried to obtain the nucleoproteins and proteose radicals from the tuberculous pigs through the blood with entirely negative results. They next tried a series on humans using pulmonary tuberculosis cases. At first they concentrated the urine to 1-10 original volume with no results, and then concentrated it to 1-25 volume with the following findings: pain immediately after injection with inflammation and pain lasting 72 hours. They eliminated the salts by dialyzing with tap water for five to six hours, after which they obtained no painful reactions (proteose reactions). As a control, they used 0.1 of 1-100,000 old tuberculin. They obtained positive results (erythema and induration) in four to six hours with the peak at eight hours, remaining for twenty-four hours and then fading. These reactions resembled tuberculin reactions but appeared before and did not last so long as compared with Enright and Rettger in which their reactions persisted from three to fourteen days.

Dienes and Fremd, 1925, found that all attempts to demonstrate the presence of a substance possessing tuberculin effects on tuberculous guinea-pigs, either in the urine of patients with extensive tuberculosis or in urine from patients receiving tuberculin during specific therapy, with considerable amounts of specific substance were negative. They found none in the blood or urine of guinea-pigs killed by injection of watery extract of the tubercle bacillus. Specific substances were present in great amounts in the urine of normal guinea-pigs injected with the same watery extract. They found that patients do not excrete substances having effects of tuberculin in amounts large enough for examination.

At the Lymanhurst School for Tuberculous Children, the auto-urine test was applied in sixty-five cases. On all of these children the von Pirquet, Mantoux, Larson's Ring Test, and Tubercumet Tests had been done. All of these children selected showed an allergy to tuberculin through a positive Mantoux reaction. The technique employed consisted in using morning urine, which was concentrated to one-tenth original volume in vacuum with the temperature in the tubes at 50°C. or below. This concentrated specimen was then filtered to remove the salts and 0.1C.C. injected intracutaneously into the arms (flexor surfaces) of the patients producing the same. As a control, the same amount of concentrated urine from a non-tuberculous non-reactor was used.

Throughout the literature no clear idea of just

how and when to read the tests could be found. Especially as various substances had been used as controls as tuberculin, saline, and concentrated urine, thereby giving varied readings. After much study it was decided to use the following as our standard since it seemed to give the clearest and most accurate readings. All readings were made at the end of twenty-four, forty-eight, and seventy-two hours. Those were read as positive which gave an area of redness and induration (5-7) mm. in diameter in which the test and not the control showed the above. All those giving a lesser degree of redness and induration (3-4) mm. in the test and not in the control were read as slightly positive. All those either giving no reaction in both or those showing the same amount of redness and induration in both were read as negative (salt reaction). Using this as our standard we found that in most of the cases the test and control showed the same or nearly the same amount of redness and induration (5-7) mm. at the end of twenty-four hours, which in the negative cases had markedly faded out at the end of forty-eight hours and gone at seventy-two hours. While in the positive cases the control and test showed both redness and induration at twenty-four hours, but at forty-eight hours the control was almost gone, while the test showed marked redness and induration, which at seventy-two hours had markedly faded out and the control had disappeared. Slightly positive cases gave a lesser degree of redness and induration with the peak of the readings at forty-eight hours. Therefore, for the best results, we found it most satisfactory to read the tests at forty-eight hours, but in all cases we read them at twenty-four hours and again at seventy-two hours.

Our results were as follows:

Of the sixty-five cases showing positive von Pirquet and Mantoux reactions, the auto-urine test was positive in nine, of which two had positive rings and tubercumet tests. The test was slightly positive in five other cases, three of which had positive ring and tubercumet tests. All of these children had tuberculous infection but showed no evidence of clinical activity at the time of examination.

Diagnosis of the cases showing positive auto-urine tests:

Masked juvenile tuberculosis—4 cases.

Bronchiectasis and masked juvenile tuberculosis—1 case.

Masked juvenile tuberculosis and primary focus, upper right—1 case.

Masked juvenile tuberculosis and sinusitis—1 case.



Masked juvenile tuberculosis, enlarged cervical nodes (tuberculous), and sinusitis—1 case.

Nephritis, sinusitis with normal chest—1 case.

Diagnosis of slightly positive cases:

Parenchymal tuberculosis (inactive)—1 case.

Masked juvenile tuberculosis—3 cases.

Masked juvenile tuberculosis, sinusitis, and enlarged tuberculous nodes—1 case.

## THE INCIDENCE OF PHYSICAL DEFECTS AND NON-TUBERCULOUS DISEASE AMONG 2,000 CHILDREN EXAMINED FOR TUBERCULOSIS

BY EDMOND NELSON

AND

J. A. MYERS, M.D.

(*In Abstract\**)

Children examined for tuberculosis in dispensaries frequently present many physical defects due to non-tuberculous conditions, some of which cause symptoms so closely simulating those of tuberculosis as to render diagnosis difficult. Inasmuch as the dispensary case usually is available for study only a short time, the examiner finds it necessary quickly to make observations on the more common non-tuberculous conditions, as well as the tuberculous conditions, and to give them the proper place in the evaluation of the data.

We have tabulated from the records of 2,000 children examined for tuberculosis in the outpatient department of the Lymanhurst School for Tuberculous Children the outstanding physical defects which may be observed in any dispensary for tuberculosis in childhood. Harrison's groove and pigeon chest were recorded in only 2.6 per cent of the entire group. Although these deformities cause no symptoms and have no relation to tuberculosis, they indicate the existence of obstruction in the upper respiratory tract or rachitis in early life. In only 1.4 per cent of this group of cases were significant heart murmurs elicited. Definite thyroid gland enlargement was found in 4.1 per cent. The incidence of thyroid enlargement is very low during the first five years of life. After five years it increases until it reaches almost 8 per cent at the age of fifteen years.

Of our group of children 17.0 per cent were found to have teeth in bad condition. The inci-

dence of carious teeth increases until it is about 24 per cent at the age of ten years. From this age it decreases so as to reach approximately 15 per cent at the age of fifteen years.

Malnutrition was observed in 26 per cent of the children of this group. It increases rather rapidly until the age of ten years when it is 30 per cent. Then it increases very slowly to slightly more than 31 per cent at the age of fifteen years.

Enlarged and diseased tonsils were observed in 29 per cent of our group of children. The incidence increases rapidly until the age of five years, when it is approximately 31 per cent. The increase then becomes more gradual until the incidence is about 34 per cent at the age of ten years. Here a decrease begins and continues until the incidence is about 25 per cent at the age of fifteen years.

Enlarged cervical lymph nodes were present in 32 per cent of our group of children. Marked enlargements were seen in only a few cases but the remainder were sufficiently enlarged to be very evident on palpation.

Although a routine study of the nasal accessory sinuses was not made in this group of cases enough sinus examinations were made to convince us that such a study should become routine.

It is a well-known fact that tuberculosis involves the tonsils and cervical lymph nodes in many cases, but there are many other cases with non-tuberculous disease of these parts. The differentiation between tuberculous and non-tuberculous disease is not always easy. It is also a well-known fact that hyperthyroidism may cause symptoms which very closely simulate those of tuberculosis. The differentiation between these conditions may require considerable time. Attention has also been called to the danger of crediting tuberculosis with symptoms from ordinary infected sinuses.

The physician assumes a tremendous responsibility when he renders a diagnosis of tuberculosis. Perhaps he assumes an equal responsibility when he states that tuberculosis does not exist. Because of the physician's responsibility and because of so many difficulties in differentiating between mild tuberculous disease and many non-tuberculous conditions in childhood our group of cases has convinced us that the private physician or the dispensary physician would best withhold diagnosis in all cases in which any question arises until a detailed and complete examination is made and a satisfactory period of observation in a hospital or the home is completed and all findings carefully analyzed.

\*This paper was published in full in the American Review of Tuberculosis, October, 1926.



## THE MODES OF INFECTION IN TUBERCULOSIS AND THEIR BEARING ON INFECTION-PREVENTIVE MEASURES

By ERNEST S. MARIETTE, M.D.

OAK TERRACE, MINNESOTA

When the cause of tuberculosis was discovered, about forty-four years ago, it was expected that a cure would soon follow, and that tuberculosis would no longer be considered in the light of a world-wide disease. But the hoped-for cure has not been forthcoming; nevertheless the menace of tuberculosis is diminishing slowly, though surely. This fact is evidenced by the declining death rate, which has dropped from 326 per 100,000 in 1880 to 90.6 per 100,000 in 1924. But, even though the death rate is declining (Dublin<sup>1</sup> predicts that it will be as low as 50 per 100,000 by 1930), there is much to be done before tuberculosis becomes as rare as leprosy.

The knowledge of tuberculosis gained during this period clearly indicates that more can be expected if our efforts include the prevention of tuberculosis as well as the cure. This should include an attempt to reduce the incidence of infection, or, if we find that is impossible, to educate the people to live and conduct themselves in a manner which will increase the protective powers of the body, so that infection will always remain infection and never develop into clinical disease.

That the lessening of the incidence of infection has not kept pace with the declining death rate is evidenced by a comparison of the autopsy reports of Rokitansky<sup>2</sup> about 1850, and the more recent reports of Opie.<sup>3</sup> Rokitansky<sup>2</sup> reported that about 90 per cent of those who died from other causes than tuberculosis showed evidence of spontaneously healed pulmonary tuberculosis. Opie,<sup>3</sup> in 1924, reported that 98 per cent of such autopsies show signs of healed pulmonary tuberculosis, varying in extent from a small lesion located entirely within the lungs to larger lesions with metastasis in the spleen, liver, and, occasionally, in other organs. These extensive lesions occurred in one-tenth of the adults examined and exceeded in extent, in many cases, those which cause generalized tuberculosis with death in childhood.

These observations would indicate that until we can control the sources of infection we apparently must accept infection by the bacillus as part and parcel of the makeup of normal men, the majority of whom go about their daily busi-

ness of life infected but well, and bend our energies towards the prevention of morbidity. One might assume in the presence of such a low death rate, but high incidence of infection, that great strides have been made either in the prevention of clinical tuberculosis or in the cure of the tuberculous individual. "The correct answer to the question as to how and when most of the people receive their first infection by the tubercle bacillus will provide the only really sound basis for infection-preventive measures."<sup>4</sup>

The control of the sources of infection is intimately connected with the control of the modes of infection. From many careful studies it is clear that the bovine bacillus is responsible for from 10 to 12 per cent of the deaths from tuberculosis in children under fifteen years of age, but tends to die out after the child attains puberty. It has little effect upon the adult organism and is practically never found in pulmonary tuberculosis. The mode of infection is by ingestion (drinking of infected cow's milk), and the first lesion is in the throat or the gastro-intestinal tract, and from there metastasis occurs to other organs of the body, as well as to the adjacent lymph nodes.

There are three generally accepted modes by which infection by the human tubercle bacillus can take place:

1. Inhalation of dust or droplets.
2. Ingestion.
3. Inoculation.

Which of these plays the most important part is still disputed, but I hope to show why I believe that the ingestion theory will account for more infection than any other method.

### 1. *Inhalation.*—

(a) Inhalation of dried, pulverized sputum in the form of dust, deep into the lungs, which then constitutes the initial focus. This is Cornet's theory and rather limits infection to an indoor affair because of the germicidal effect of direct sunlight upon dried sputum. It presupposes also a home contact with an open consumptive or the carrying of infected moist sputum on the soles of shoes into the home where it is dried, pulverized, and converted into dust.

(b) Inhalation of fine droplets produced by coughing or sneezing, or, occasionally, by enforced expiration during conversation. This is Flügge's theory and the most generally accepted one at present. He claimed that the dust inhalation theory was incorrect because tubercle bacilli can only live outside when they are protected by moist sputum and tend to die out when the sputum dries and is left exposed to the action of



the air and direct sunlight. In the droplet theory the initial foci would be in the lungs, occurring most commonly indoors, as droplets can float around in the air of a quiet room for about two hours, whereas the bacilli do not live long on droplets injected into the open. This theory also presupposes a prolonged and intimate contact with the open consumptive.

2. *Ingestion*.—This theory was developed by von Behring in 1903 and Calmette<sup>5</sup> in 1905. This is the broadest theory and implies that infection can take place either indoors or out, and from any source contaminated by human sputum, whether in the raw or dried state, as well as by ingestion of infected cow's milk. The only conditional requirement is that diluted infected sputum pass the lips of the human being.

3. *Inoculation*.—In inoculation in any manner the only conditional requirement is that tubercle bacilli be introduced beneath the skin. Such a comparatively small number of individuals are exposed to this type of infection, however, that it is unnecessary to go into it further here.

In determining whether we shall accept the theory of ingestion or inhalation (whether by dust or droplets) as the mode by which most of the people receive their first infection, we must consider facts rather than theories. The inhalation theory is rather limited in its scope and implies an indoor infection, either indirectly through the inhalation of dust or directly from person to person by inhalation of droplets, for both a prolonged and intimate contact is necessary. This theory seems to consider raw sputum unimportant and implies that one is safe if one remains out of doors. The ingestion theory on the other hand is very broad and does not limit the manner of infection in any way except that diluted contaminated sputum must pass the lips of a human being. It includes both indoor and outdoor infection.

If we accept the usual claim that 75 per cent of the population is infected by the eighteenth year of life, then the inhalation theory would necessarily require that this 75 per cent have come into an intimate and prolonged contact enough with an open consumptive either indoors or out to acquire an infection by that method. If infection takes place indoors or through direct contact with the coughing consumptive how can we explain the fact that according to Drolet<sup>6</sup> 66 per cent of the children from non-tuberculous parents in the East Side of New York gave a positive tuberculin test, while only 64 per cent of the children from tuberculous parents in the same district gave a positive tuberculin reaction?

It would seem much more reasonable to accept the broader theory, which provides for infection both inside and outside.

Furthermore, about 10 per cent (which would be about one-seventh of those infected) receive their first infection by the end of the second year of life. Yet this is the period of life when the home contact is most intimate. The child has a tendency to put into his mouth everything he touches, thus establishing a more prolonged and closer contact with home dust than at any other age. This is true whether the home dust be infected by the careless coughing of a consumptive or by material brought into the home on the sole of the shoes or by any other means. Furthermore, during this period the infant is helpless and cannot protect himself when the open consumptive carelessly or thoughtlessly coughs into his face or desires to kiss or fondle him. Also, cow's milk makes up a larger proportion of the child's diet than at any other period of life. This period of the child's life would then seem to indicate the relative importance of home contact by whatever method "in the scheme of tuberculous infection,"<sup>4</sup> which is apparently very small.

On the other hand, 50 to 60 per cent of the people (or between  $\frac{4}{7}$  and  $\frac{5}{7}$  of those infected) receive their first infection between the third and the sixth year of life. This is the period when the child's life is expanding enormously, when he is making his first outdoor contact, and when he spends more time out of doors in ground games than at any other period of life. He cannot avoid contaminating his hands with the dirt of the streets and whatever it contains (including the moist sputum of many people), and he has no scruples about putting his dirty hands into his mouth.

After the sixth year of life only about 15 per cent (or another  $\frac{1}{7}$ ) receive their first infection.

Thus of the 75 per cent infected only about 10 per cent (or  $\frac{1}{7}$ ) receive their first infection during the period of life when home contact is most intimate, while about 65 per cent ( $\frac{6}{7}$ ) of those infected receive their first infection after they have begun their outdoor life.

This would seem to indicate that direct contact, either indoors or out, cannot possibly explain such an early, universal tuberculization of the human race, and, therefore, most of the people must receive their first infection through indirect contact in the manner outlined. At least no one will deny that the open consumptive roaming the streets can scatter tubercle bacilli over a large territory and thus expose more people to the possibility of infection than he could



in his own home or even the home of his friends.

One would then expect to find as much or more tuberculosis in our cities where there is no history of home contact as there is when a history of home contact exists. That expectation agreed with the findings of Drolet<sup>6</sup> in a recent study of some 7,500 persons (both adults and children) living under the congested conditions which exist in the East Side of New York. According to his study 64 per cent of the children with a positive parental history of tuberculosis reacted to the tuberculin test, while 66 per cent of the children with a negative parental history of tuberculosis also reacted to the tuberculin test. He concluded that for the district studied there was just as much tuberculous infection among the children where the home was free from parental tuberculosis as there was in the home where parental tuberculosis existed. He also studied the presence of actual tuberculous disease and the question of exposure to infection. He found that 34 per cent of both children and adults with a positive family history of tuberculosis were found upon actual examination to be tuberculous, while 59 per cent of both children and adults with a negative family history were found to be tuberculous. His figures would seem to indicate that there is a greater amount of tuberculous parents than among the descendants of tuberculous parents. He thinks it is due to the fact that the tubercle bacillus in attacking the offspring of a non-tuberculous parent is implanting itself upon virgin soil as compared with its attack upon the offspring of tuberculous parents. In his studies of exposure to infection of some 5,294 patients he found that the history of parental exposure to tuberculosis was about equal in both the tuberculous and non-tuberculous adults.

In the examination of some 2,000 persons, nineteen years of age or under, in our own community who were brought to the clinics because of exposure to tuberculosis or because of some symptom which suggested tuberculosis, Myers<sup>7</sup> reports that 41.7 per cent reacted to the tuberculin test, and that 58.3 per cent did not. This was a group of so-called "suspects" and would indicate that for a city like Minneapolis, at least, 75 per cent of the people do not become infected by the time they are nineteen years of age.

In other communities where the congestion is not so great and where the sputum has a chance to be dried and sterilized by the sun before it is picked up by other human beings, home contact apparently plays a larger part in spreading infection. This is well shown by Slater's report<sup>8</sup>

of the conditions in a rural community in southern Minnesota. He found in cases of known exposure that 81 per cent of the children reacted to the tuberculin test, while in cases where there was no history of exposure or only a doubtful history only 11.9 per cent reacted to the tuberculin test.

But what can we do about it? I cannot conceive that we shall ever be able entirely to prevent infection, but at least we can attempt to postpone it or so to reduce the size and frequency of the dose, or the opportunities of infection, that clinical disease will not develop.

The report<sup>9</sup> from the village of Saranac Lake, which is, in reality, a large tuberculosis colony, that there is no more tuberculosis among children of that village than there is in any other community of equal size, should prove to the world that the consumptive can live out his life, bring up his family, and still control the spread of tuberculosis.

According to Bushnell,<sup>10</sup> Pollack, of Vienna, found that children over four years of age did not appear to be unfavorably affected in any way by the entrance of a tuberculous individual into the family circle, while those of lesser years grew up more delicate than the other brothers and sisters. Bergmann,<sup>10</sup> of Sweden, has very similar results. He found that among children of tuberculous families the mortality of tuberculosis reaches 12 per cent among those exposed to infection in the first year of life and 11.8 per cent among those exposed during the first four years, but that no children first exposed after the fourth year have died of tuberculosis among his cases, and no cases of tuberculosis have developed from first exposure after the seventh year.

If these three reports are true reports of actual conditions then any program which attempts to postpone infection by the reduction of the opportunities of infection is a sound one.

The reduction of the opportunities of infection can best be accomplished in the following ways:

First, hospitalization of the open case: This, of course, removes the open case from the community, and thus he cannot scatter bacilli either in his home or on the streets and sidewalks of our community. Hennepin County has realized the value of hospitalization of the open case so keenly that it has very generously provided about three times the number of beds recommended by the National Tuberculosis Association. This allows one bed to every four or five registered cases, instead of one bed to every ten or fifteen cases, which is the usual goal of most communities.



Second, the education of the open consumptive: In my opinion it will be impossible ever to hospitalize all of the open cases for two reasons: one, the large number of beds needed, and, two, the difficulty of finding every open case and of persuading all open cases to accept hospitalization until their sputum has become tubercle free. Therefore, every effort should be made so to educate the consumptive that he will cover his mouth and nose when he sneezes with a paper napkin or a piece of gauze which can be used once and then burned, and that he will use a pocket sputum cup whenever he has to expectorate.

Third, education of the public concerning the importance of enforcing our antispitting laws and of improving their personal hygiene: If there were the correct public sentiment concerning spitting then the person who expectorates into the streets would be shunned rather than the person who tries to protect others by using a pocket sputum cup. Improving the personal hygiene would include the use of soap and water to keep the hands free from contaminated material, and also an attempt to persuade adults, as well as children, to keep their hands and everything they touch out of their mouths. It would also include the use of rubbers, overshoes, and door mats, as well as the frequent flushing of our streets, in order to keep our homes free from the tubercle bacillus by reducing the possibility of bringing moist sputum into our homes on the soles of our shoes. Baldwin<sup>11</sup> accepts the report that the scarcity of soap was one of the reasons for the alarming increase in tuberculosis in Germany and Austria after the war. Even Emerson,<sup>12</sup> who would like to believe that the scarcity of food was one of the major factors in the increase, reports that the investigators could find more evidence of an increase in the opportunities for infection due to the poor living conditions, which were so bad that only about one consumptive in four had a single bed to himself. The reduction of the resistance due to the lack of food must have played a part in this marked increase, but poor food alone would not produce tuberculosis. On the other hand, it is certain that a massive enough dose of tubercle bacilli repeated often enough will produce tuberculosis in spite of the best diet in the world.

The milk supply, of course, should not be neglected; and while the pasteurization of milk is an excellent thing still I think that milk from tuberculin-tested herds and then pasteurized is still better.

We can only judge whether our preventive in-

fective measures are sound by the results obtained in various communities. Drolet<sup>13</sup> has recently reported the causes of the reduction in the death rate from tuberculosis in children in New York City. According to this report, in 1898 there were 609 deaths per 100,000 among infants, but in 1924 this had fallen to 94 per 100,000, and for the entire childhood population under fifteen years of age the death rate has fallen from 136 per 100,000 to 33 per 100,000 for the same period. In analyzing this reduction he found that between 1905 and 1913 the death rate for children remained practically at a level, and that that period or time coincided with the period when no new hospital beds for tuberculosis were added to the facilities of New York City. But when 900 beds were added in 1913 and 1914, and the general pasteurization of milk also was required in 1914, the tuberculosis death rate (except during the years of the war and influenza epidemic) was quickly halved; hence the reduction in the death rate seemed to have coincided, in New York at least, with the opening of new sanatoria and hospitals for the tuberculous and the general pasteurization of milk.

Drolet<sup>13</sup> concludes that the costly and apparently discouraging work of hospitalizing the advanced consumptive has more than justified itself. The results have been twofold: first, the occasional saving of the lives of the advanced consumptive or at least a comfortable and adequate care during their terminal disease; and, second, the removal of the source of infection from the community, with the apparent consequent reduction in the opportunities of infection of children, which is accompanied by reduction in the death rate. This reduction is chiefly apparent in the younger children and leads one to conclude that if the reduction in the opportunities for infection postpones the time of infection until the organism of the child is more matured and developed it has a better chance to withstand an infection by the tubercle bacillus than has the organism of the infant.

#### SUMMARY

It seems reasonable to assume that infection can take place in a variety of ways: by inhalation, either of dust or droplets, resulting in the lodgment of the bacilli either in the upper or lower respiratory tract; by ingestion, with infection taking place in the upper or lower digestive tracts; or by inoculation beneath the skin. The broadest theory and the one which has the most universal application seems to be the ingestion theory, for it appears to be the only method

which will account for the majority of the infections taking place when the child first makes his contact with the outside world.

## CONCLUSION

The chief lesson that we learn from a study of the modes of infection is the realization of the importance of the ingestion method and what must be done to control it so that infection either can be prevented entirely, or, at least, the time of infection postponed.

The next step in the program is, of course, an effort so to protect the body that it can care for the infection after it has been received, thereby reducing the morbidity of the disease, as well as the death rate. This still remains the most important part of our antituberculosis campaign.

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## SERIAL EXAMINATIONS OF CHILDREN SHOWING POSITIVE TUBERCULIN SKIN REACTIONS WHILE UNDER TWO YEARS OF AGE

By H. F. WAHLQUIST, M.D.,

AND

J. A. MYERS, M.D.

(In Abstract\*)

Until recently it was believed that tuberculous infection in children under two years of age would almost invariably result fatally. For the most part the reports that have been made in the

past were on groups of children who were ill enough to require the services of physicians. Many of them had not only tuberculous infection but also tuberculous disease when first seen. No doubt this accounts, in considerable part, for the high mortality that has been reported so often. The careful studies of Reuben and Smith, Hempelmann, Krause, and others have shown that even when tuberculous disease exists in the infant the prognosis may be good in a fair percentage of the cases, and that in some instances complete healing occurs. They point out further that since it is true that some infants recover from severe tuberculous disease perhaps many overcome simple infections without ever presenting any manifestations of disease. Indeed, Reuben and Smith state that they have had occasion to observe six cases which, if it were not for the presence of positive von Pirquet reactions, the conditions would have been entirely missed. All of these cases were alive and well at the time the report was made.

Krause recently said: "We may be certain, for instance, that the number of infected infants is several times that of those ill with tuberculosis. Infection tests performed thus far indicate that on the average about ten per cent of the general run of dispensary infants of one year of age react positively. Of course, the number dead or ill from tuberculosis at this age is nowhere near this proportion; and these newer facts of the evidence of infection must surely make us revise our older ideas of the extreme gravity of tuberculous infection, as such, for young infants."

It was these facts that prompted the present survey at the Lymanhurst Out-patient Department where 71 cases of children up to two years of age have had tuberculous infection revealed by the von Pirquet test.

In grouping these cases under various headings we found a definite history of exposure in 95.7 per cent of the total series. Exposures were equally divided between mothers and fathers in 72.2 per cent. 11.2 per cent were exposed to tuberculous brothers and sisters, while 15.5 per cent gave a history of exposure to several sources of infection (Table 1.) The greater amount of tuberculosis in parents of this group of children is of course due to the fact that at any tuberculosis clinic the children represent largely the offspring of tuberculous adults.

The most striking observation in the whole study is the low rate of mortality, which did not exceed 8.4 per cent of deaths caused by tuberculosis. Of these, two cases died between the ages of six and twelve months, one case died be-

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tween twelve and eighteen months, and three died between eighteen and twenty-four months. The cause of death was tuberculous meningitis in two instances, while four died from pulmonary tuberculosis, and 11.2 per cent are now being treated.

These mortality figures are indeed startling, but, it must be remembered that we are speaking of cases with infection as evidenced by the von Pirquet test and not limiting ourselves to obvious cases of tuberculous disease. The question of hilum node involvement, cough, fever, etc., was secondary in consideration to the skin test. Of course, many of these cases would have been entirely missed if it were not for the presence of positive tuberculin tests, and the majority of them were brought to the Clinic, not because of symptoms, but mainly because of exposure.

## STUDIES IN TUBERCULOSIS IN INFANCY AND CHILDHOOD

### A STUDY OF CHILDREN WITH EVIDENCE OF PRIMARY FOCI\*

By E. LEGGETT

DOROTHY HUTCHINSON, M.D.

AND

J. A. MYERS, M.D.

The children under observation all have  $x$ -ray evidence of primary pulmonary tuberculous infection. They are to report to the Out-Patient Department every six months for re-examination. The examination consists of a general physical examination, tuberculin tests, and stereoscopic  $x$ -ray examination of the chest. We are intending to keep these patients under observation for five years or longer, during which time all changes in the primary focus will be carefully observed and recorded. There are numerous paths along which change may occur. The child may develop the adult type of tuberculosis, in which case the study of the primary focus as a factor in reinfection will form an interesting problem. The focus may remain unchanged or may regress. It is even possible that it may be absorbed. The relationship of the primary focus to the immunity of the patient as shown by repeated tuberculin tests will also be of interest.

The primary focus in tuberculosis is part of the reaction to first infection. The primary

complex consists of the focus plus the changes in regional lymph node and connecting lymphatics. It is located at the point of entry of the infection where specific inflammatory changes take place. These changes result in tubercle formation and may later become fibrosed or calcified. The lesion, according to Ghon, is found more frequently in the right than in the left lung, it is most often located in the right lower lobe and is situated just beneath the pleura. When the reaction has gone on to calcification the presence of the focus may be demonstrated by the  $x$ -ray. Such lesions form the basis of our studies in the present series.

The development of the primary focus is illustrated by serial  $x$ -ray plates, which show a primary parenchymal lesion and which in two years time has disappeared leaving as evidence of the infection small calcified areas, subpleural in situation. The typical primary focus is shown in the  $x$ -ray plate as a small calcified area, subpleural in situation and not surrounded by bronchial markings. In the 55 cases which comprise the first series under observation the location was as follows: right upper lobe, 9; right middle lobe, 3; right lower lobe, 17; left upper lobe, 13; left lower lobe, 13. In all cases the focus was calcified, and in the serial plates examined no changes in density were discovered which could not be accounted for by variations in  $x$ -ray technic. In all cases the hilum nodes were enlarged, in all except three they were calcified. The calcification was usually more marked on the side of the primary focus. The size of the focus varied from that of a pea to that of a bean. Three patients showed two or more foci. In some series the original report of primary focus was not repeated in reports on subsequent plates, but in all careful search revealed the presence of the calcified area previously reported a primary focus. The  $x$ -ray report of similar primary foci has been confirmed by autopsy examination.

In some patients with negative history of exposure and negative von Pirquet reaction the correctness of the diagnosis of primary tuberculous focus is doubtful. Eberson believes that calcification of the hilum nodes is "an indelible stigma of tuberculosis." This is a direct contradiction of the statement of the Research Committee of the National Tuberculosis Association, that such calcification indicates previous inflammation possibly, but not necessarily tuberculous in character. The von Pirquet reactions must be checked by Mantoux tests before we can state definitely that these patients show a negative tuberculin reaction.

\*This is a summary of a preliminary report of a study carried on at Lymanhurst School, and was published in full in the American Review of Tuberculosis, October, 1926.



## MASKED JUVENILE TUBERCULOSIS

BY HYMAN S. LIPPMAN, M.D.

The diagnosis of tuberculosis in childhood is not very difficult if the lungs, bones, joints, or meninges are involved. The problem becomes more complex, however, when one attempts to pronounce tuberculous a child who shows few physical findings of the disease.

Of 836 children examined in one year, at Lymanhurst Out-Patient Department, 107, or 13 per cent, showed enough evidences in their history or findings to warrant a diagnosis of suspected tuberculosis. This study is concerned with an analysis of these cases, to find those who were actively tuberculous, but in whom the physical findings were masked.

After a careful analysis of the findings in the 107 cases suspected juvenile tuberculosis, 18 were found who could be said, with reasonable sureness, to show the masked juvenile form.

Sixteen of the 18 were exposed to active tuberculosis.

Fatigue was a complaint in 100 per cent of our group. They tired easily; they preferred to stay in rather than play with their friends. When they did get out and exerted themselves, they tired more readily than their playmates.

The appetite was good in half the cases and poor in the other half. Nervousness and emotional disturbances of various sorts were occasionally mentioned. A child who is fatigued usually eats poorly.

On physical examination the outstanding finding was malnutrition. All except two were undernourished and poorly developed. They had poor muscle tone and posture.

The D'Esine sign was reported positive in one case, but no enlarged glands were seen in the x-ray in this instance. Examinations of the heart, lungs, abdomen, and extremities failed to show findings of significance.

Roentgenograms were routinely made. Slight or moderate enlargement of the bronchial lymph-nodes were reported in 75 per cent of the children, findings which do not vary from those seen in the average school child.

The von Pirquet test was positive in 100 per cent of this group of children. We feel that, unless a positive tuberculin test can be demonstrated, the diagnosis of juvenile tuberculosis cannot be made.

Of the 18 children in this study, 80 per cent usually had a 99° or more P. M. temperature.

Other foci of infection, chiefly infected tonsils, sinuses, and teeth, were absent in all the cases.

If a child is getting along well, shows no signs of fatigue, and is but slightly undernourished, the case should not be diagnosed as masked juvenile tuberculosis, even though his Pirquet is positive and he has been actively exposed. If this child has been infected with tubercle bacilli or may have had a tuberculous disease in the past but with no subjective signs, the infection is most likely arrested. The fact that the subjective signs are wanting, automatically rules the case out of the group of masked juvenile tuberculosis. It should be classed as arrested juvenile tuberculosis.

At least as many cases as those reported in this study were found which might have been diagnosed as masked juvenile tuberculosis were it not for the fact that they harbored definite foci of infection. Infected teeth, tonsils, and sinuses may likewise cause fatigue, malnutrition, and temperature.

Even though a child has been exposed to tuberculosis and has a positive tuberculin test, one cannot determine whether the tuberculous process or the focus of infection is responsible for the symptoms. Tuberculosis may be the important factor of the two, but, until the foci have been removed, one can only suspect this. Such cases, then, must be diagnosed as suspected juvenile tuberculosis. The foci should be removed, and the children should be kept under observation. If, after these complicating factors have been removed, the subjective symptoms persist, we are very likely dealing with a case of masked juvenile tuberculosis.

The efficacy of the Larson ring test and tubercumet tests is at present being determined. If they prove to be of value in diagnosing active tuberculosis, the diagnosis of the condition under discussion will be quite simple.

Masked juvenile tuberculosis should be diagnosed on the basis of the following factors:

1. History of exposure to tuberculosis.
2. History of fatigue, manifested by tendency to tire easily, by restlessness and irritability, poor appetite, and a languid and listless disposition.
3. A positive tuberculin test.
4. Malnutrition.
5. A moderate elevation of temperature.
6. Absence of other foci of infection.

# SERIAL EXAMINATIONS OF CHILDREN WITH PULMONARY LESIONS

BY DOROTHY HUTCHINSON, M.D.,

AND

J. A. MYERS, M.D.

(*In Abstract\**)

The work of Krause on human resistance to tuberculosis at various ages has tremendously stimulated interest in the study of cases over long periods of time. Some of his cases under observation for many years have made it possible for him to prove facts regarding this disease which differ greatly from our former beliefs and opinions. This is particularly true of the healing and, in some cases, of the complete disappearance of tuberculosis.

Every physician who treats tuberculous patients sees many who have unmistakable tuberculous lesions in the lungs, lesions causing symptoms, but which disappear, leaving no sign of their existence, and such patients are restored to good working capacities. Indeed, Trudeau isolated a strain of tubercle bacilli which, when inoculated into guinea-pigs, produces disease, but the diseased animals recover.

Serial examinations by Stewart, Amberson, Webb, and others made on patients suffering from pulmonary tuberculosis have shown that fairly extensive lesions may become so removed as to leave little or no evidence of their former existence. Moreover, Gardner made one of the outstanding contributions of all time when he presented the histological mechanism of the process of healing. Using the famous R strain isolated by Trudeau in 1891, Gardner proved conclusively that tuberculous lesions may heal by resolution and heal so completely as to leave a perfectly normal histological appearance of the involved lung and pleura except for a lymphoid hyperplasia, which serves as the only indication of the previous disease.

The question arises as to whether pulmonary tuberculous lesions in infants and children may undergo such marked healing and even complete disappearance as they do in adults. Indeed, Harms has already shown that healing by absorption does occur in infancy and childhood. The object of our study is to determine in so far as possible the course of pulmonary lesions in infancy and childhood. The Lymanhurst School and Hospital for Tuberculous Children offers an opportunity to observe such lesions from the date

of their detection over considerable periods of time. The cases with progressive disease are sent to the Glen Lake Sanatorium; when their disease becomes arrested they are returned to the Lymanhurst School.

A total of 66 children were examined. Of these 26 were found later to be improved; 9 had become healed; 6 showed advance in their condition; 5 had died; while 20 could not be traced for re-examination. These 20 cases all had minimal or questionable involvement, and, most likely, would have returned for further care had not their conditions been favorable. The nine cases considered healed all showed a complete disappearance or calcification and fibrosis of the lesions.

In considering the result of this series of cases it must be borne in mind that few were clinically ill at the time of examination, the children being sent to the clinic by the school or visiting nurse on account of exposure to tuberculosis, for malnutrition or some suggestive symptoms, the more acutely ill children being examined by the family physician. Perhaps if the course of all cases of adult type of tuberculosis in children were followed a higher percentage of deaths would be found. This study is of importance in showing the great number of mild cases which undoubtedly run their course undiagnosed, the majority of the cases improving and the true nature of the disease remaining unsuspected. Were roentgenographic plates of the chest made in the obscure low grade ailments of childhood we believe that many of the cases would show pulmonary lesions and that many of these children could be greatly benefited by proper care guarding them against breakdown in the later years when they meet the greater strain of life.

## THE LUNG HILUM AND TUBERCULOSIS

BY H. A. BURNS, M.D.

AND

J. A. MYERS, M.D.

(*In Abstract\**)

Prior to the development of the *x*-ray and the skin reactions, tuberculosis was recognized clinically in its secondary phase only when the superficial lymphatics became involved. The entire problem of tuberculosis diagnosis, treatment, and control was originally limited to the third stage

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of the disease. The diagnosis of the disease concerned itself with its final stage while prophylaxis and treatment of the earlier manifestations of the tuberculosis invasion remained in obscurity until revealed through the development of the x-ray and the skin reactions. These aids in the diagnosis of the disease have demonstrated the fact that tuberculosis has an epidemiology quite its own. The collection and study of data accumulated as a result of the use of present-day equipment and in the light of our present knowledge have provided the physician with most valuable information which promises, when finally evaluated, to guide us to principles of prophylaxis and control just as applicable in the control of tuberculosis as in other infectious and contagious diseases.

A study of 1,412 children examined at the Lymanhurst School has been made in an attempt to add some light to the study of the hilum in childhood and its relation to tuberculosis infection. The history of exposure followed by a positive skin reaction and clinical manifestations of a chronic infection confirmed further by stereoscopic plates is sufficient to warrant a diagnosis in the absence of pulmonary symptoms of juvenile tuberculosis.

With few exceptions these 1,412 children are twelve years old or under, so that they easily come within the ages that show the primary and secondary types of the disease. This group of children, chosen as they are because of known exposure and because of suggestive physical findings, represents a group in which a rather extensive tubercularization has taken place.

609 of these children were definitely exposed through association with open cases in the home.

614 gave positive skin tests.

Stereoscopic plates were taken in 1,164 cases.

947 showed calcification of the hilum either upon one side or both.

849 showed the hilum moderately enlarged.

19 showed the hilum greatly enlarged.

231 demonstrated calcified primary foci.

This group of children, 1,412, gave histories of having suffered from ten major symptoms at the time of their first examination at Lymanhurst. Each child in the group averaged complaining of three symptoms each.

Coughs and colds.....	968
Run down .....	804
Enl. sup. lymph.....	566
Fatigue .....	536
Fever .....	461
Nervousness .....	289

Chest pains (pleurisy).....	232
Loss of appetite.....	196
Night sweats.....	174
Blood spitting.....	21

Of this group there were 231, or 16 per cent, who showed calcified primary foci in the lungs. Two hundred twenty-two of these cases with primary foci showed calcified hilum nodes and gave 23.4 per cent of all cases of calcified nodes. The symptoms of which the child complained when first examined were no more prevalent among these children than those who showed no evidence of calcification of primary foci. Some symptoms complained of were even less frequent among children showing primary foci. Fever was one of the common symptoms complained of and occurred among 461 of the children, or 32 per cent of all those examined but only among 17 per cent of those who showed calcification of the primary foci.

While 43 per cent of the entire group of 1,412 children gave a positive skin reaction only 24 per cent of the cases showing primary foci gave the same reaction. Fatigue was present in 37 per cent of the 1,412 children and in 50 per cent of those with calcified foci.

Forty-one children in this group were under two years of age, 25 of whom were under one year. Thirty-two were exposed to active cases of pulmonary tuberculosis. The skin reaction was positive in 18 of the 28 upon whom the test was reported. Stereoscopic plates were made of 39 of those children under two years of age, 5 showed calcification of the hilum, 2 showed primary foci calcified, 13 showed enlarged hilum shadows, 28 normal hilum shadows. Tubercularization of these infants has not terminated quickly in the third stage of the disease, in fact the invasion has occurred among members of this group very much the same as in groups at higher age levels. General disseminated tuberculosis has not occurred, and these children are doing as well as other children infected later in their childhood.

From a study of these cases it would seem that the pathological classification applies to infants as well as to the later ages, and that infection frequently follows exposure during infancy without serious results.

The 1,412 cases here considered, many of whom have been exposed to positive sputum cases of pulmonary tuberculosis, which show significant pulmonary changes clinically by skin reactions and by roentgenogram, constitute the potential sanatorium load of the future. Tuberculosis prophylaxis as carried out at the Lymanhurst School has demonstrated the effectiveness of such

treatment in this group of children through the disappearance of symptoms, gain in weight, change in disposition, and attitude towards play. This group of juvenile tuberculous (arrested) children observed and treated early during the secondary stage of their disease reinforced by health habits will be able, it is hoped, to carry their tuberculous bronchial lymph nodes through the vicissitudes of adult life without further re-activation of their juvenile infection or its extension into the lung parenchyma.

### EXPOSURE TO TUBERCULOSIS IN CHILDREN\*

By L. F. RICHDORF, M.D., PH.D.,

AND

A. E. HETZLER, B.A.

The histories of the first 300 children admitted to Lymanhurst Out-Patient Clinic were studied to show the relation between exposure and infection. This necessitated a critical survey of the data given. First histories taken in different departments on the same child were compared, and it was found that variation occurred in one of about six cases; that is, the history of exposure to tuberculosis was recorded as negative in one department and positive in another. This led to a tabulation of the adult contacts given on the history chart as a source of positive exposure. It was soon apparent that the recorded data were insufficient and often indefinite as regards the evidences of tuberculosis in the adult contact. The confirmation of the disease was often not attempted; the possibility of the excretion of the bacillus, even as regards positive and negative sputum, was not investigated; the type and duration of exposure were not mentioned. In order to supplement the original histories the follow-up records on the "return" cases were made more detailed. From the records of the 123 "return" cases it was determined that in about 1 of 30 cases a death occurred in an adult from tuberculosis, and in 1 of about 10 cases the diagnosis of active tuberculosis was made in an adult contact after the children had come to the clinic for re-examination. A table showing the relation of infection to exposure was made only after the above analysis of the original histories and follow-up records in all of the three departments of the Lymanhurst Clinic. Infection was determined by a positive von Pirquet tuberculin

test or a positive *x*-ray, either a primary focus or adult type of lesion. Positive von Pirquets and primary foci in *x*-ray occurred twice as often in the exposed as in the non-exposed or questionable groups of children. In 82 per cent of the cases showing a primary focus, a positive von Pirquet tuberculin reaction was found.

The authors believe that, due to the earlier diagnosis of tuberculosis to-day, more care must be taken to get specific data concerning the tuberculous status of adults with whom children come in contact. Children under observation because of suspected tuberculosis often at the first examination gave a negative history of exposure and on re-examination, a positive history of exposure. This means that adults may have the disease even in the active or open stage without being suspected, and a positive exposure may be entirely missed unless the history of adult contacts are checked up from time to time.

### THE PREVENTION OF HEART DISEASE IN CHILDREN

By M. J. SHAPIRO, M.D.

In discussing the plans for the prevention of any disease, it is well to bring out what is known about the etiology of the disease. The campaign for the prevention of heart disease has been often compared to the campaign which has been so successfully waged against tuberculosis. With heart disease, however, we are dealing with a much more complex and much more variable condition. The etiology of tuberculosis is known. We understand a great deal about the contagiousness of the disease. We know quite well now the necessary steps in the prevention of the original infection. It has been shown by many investigators that 75 to 85 per cent of all children afflicted with acquired organic heart disease give a history of rheumatic fever. In our work at the Lymanhurst Heart Clinic we have found that 75 to 80 per cent of all our cases of acquired organic disease of the heart give a history of either acute inflammatory rheumatism or chorea. We did not include the cases giving a history of repeated tonsillitis, for we did not feel that we could depend on the history of tonsillitis alone as a cause of heart disease. About 10 per cent of our organic heart cases show some congenital defect of the heart. A small number give a history of heart disease following diphtheria. In about 5 per cent of the cases the etiology could not be definitely determined. It is apparent, then, that

\* (From the Department of Pediatrics, University of Minnesota, and the Lymanhurst School for Tuberculous Children.)



the problem of heart disease in children rests almost entirely with the problem of rheumatic fever. Especially does the prevention of cardiac disease in children depend on the prevention of rheumatic fever. It is very unfortunate that the cause of rheumatic fever, as yet, has not been definitely determined. No one has been able to reproduce the typical clinical picture or the exact histopathology in animals.

Very little is known as to the possibilities of contagion in rheumatic fever.

It is clear, then, that we cannot hope to prevent heart disease to any great extent until the etiology and nature of rheumatic fever is settled. We can, however, to some extent diminish the intensity of the acute carditis that occurs with rheumatic fever. Swift, of the Rockefeller Institute for Medical Research, has shown that practically every case of rheumatic fever shows some involvement of the heart. He had the opportunity of studying 72 cases with the aid of the electrocardiogram, and he found that 90 per cent of the cases revealed a delayed conduction time or some abnormality of the ventricular complex. Many of these defects were transitory and cleared up as the condition of the patient improved. It has been shown by Swift also that the heart valves are always acutely inflamed during rheumatic fever. He had the opportunity to study closely the hearts in four cases of patients who died shortly after the onset of the rheumatic fever. These hearts did not show any vegetations on the valves nor any gross defect, but, on microscopic examination, an acute valvulitis was found in every case. The causative factor in rheumatic fever apparently picks out the endocardium, just as the tuberculous germ picks out the lungs. In every case of acute rheumatic fever, then, we are dealing with an acute infection of the heart. What can we do to prevent serious impairment of the heart during an attack of rheumatic fever? There are four definite factors in the proper treatment of this condition:

1. *Prolonged rest in bed.*—Swift found it necessary to keep his patients in bed, on an average, 100 to 110 days before the heart came back to normal. These children should be confined to bed until the heart rate is normal and all signs of fatigue are gone. If they are in a hospital they should certainly be followed with the aid of the electrocardiogram.

2. *The maintenance of the proper nutrition.*—It was for a long time thought that certain elements in the diet had an effect on rheumatic fever, and many children were starved and suffered because of the malnutrition which is itself

a part of the rheumatic fever. It has been shown, now, that diet has no effect and, in fact, that these children get along much better if their weight is kept up. It is necessary then to feed these children well during the entire course of the disease.

3. *The giving of large doses of salicylates.*—It has been shown that therapeutic doses of salicylates tend to overcome the toxemia of rheumatic fever and also slow the heart and thereby aid in diminishing the injury to the heart valves.

4. *The removal of foci of infection.*—It is at this time that the removal of tonsils and abscessed teeth should be done and the drainage of infected sinuses considered. After the damage has been done and the heart is already incompetent, our experience at Lymanhurst has shown us that very little good is realized from the removal of foci of infection. We have had some very bad results in removing tonsils in children with impaired hearts. It is our opinion that tonsils should be rarely removed in children with definite organic heart disease.

It is most important, then, that in attempting to prevent heart disease we treat our cases of rheumatic fever by prolonged rest in bed, proper nutrition, proper medication, and the removal of foci of infection before the heart has already been crippled.

With the present state of knowledge, we can lend our greatest effort in preventing heart failure. Here, again, in discussing the prevention of heart failure, it is necessary that we appreciate the complexity of this problem. It has been our experience at the Lymanhurst Heart Clinic that there is a certain number of heart cases that begin with what appears to be an ordinary attack of rheumatic fever, but which go on as an acute infection and finally present the picture of sub-acute endocarditis and end in death. These children may get up for a while and even go back to school, but, if they are observed carefully, it will be noted that they continue to run a low grade of temperature, that the pallor persists, and that they finally are forced back into bed again and die. I know of nothing that will prevent the steady progress of this type of case. We had just such a case a few weeks ago at Lymanhurst. A girl, thirteen years of age, was referred to the School nurse by the teacher. The teacher had noticed that this girl was inattentive, was losing weight, and looked pale. On taking the girl's temperature the nurse found it to be over 100° and sent her home. The next morning the girl was again in school, and the mother insisted



that there was nothing wrong with her and she did not want her to lose any time from school. The nurse continued to send the girl home from time to time, and the mother insisted on sending her back. An appointment was finally made for me to see the girl at the school. On examination, I found that the girl's temperature was over 100°. There was a very distinct pallor, dyspnea on exertion, and the girl complained of soreness in her knees. Examination of the heart revealed at this time a mitral stenosis and regurgitation with considerable enlargement of the heart.

This girl gave a history of what was apparently a mild case of rheumatic fever some six weeks before I saw her. I recommended that she see her family physician, which was done. The doctor told her she had something wrong with her heart and said she must stay in bed for a while. The girl improved somewhat and was sent back to school in about two weeks, but examination revealed that her condition was still progressive, her temperature was still up, and the pallor was increasing. She was referred to the Lymanhurst Heart Clinic, and an *x*-ray examination of her heart revealed an enlargement with a characteristic contour of a double mitral lesion. At this time she had developed numerous large rheumatic nodules about the elbows, wrists, and knees. It was thought best to send her to the Minneapolis General Hospital for a period of observation and rest. She continued to run a septic temperature, and after remaining in the hospital for about five weeks she finally insisted on returning home, and she died about ten days later.

Our efforts are of the greatest value in preventing heart failure in the children who have had rheumatic fever and in whom the infection has become localized in the heart. These children need to be under constant careful medical supervision. They need more rest, better food, more outdoor play, special instruction in school where they will not find it necessary to compete with the normal child, and especially do they need careful vocational guidance from the very beginning of their school careers. In my work as medical examiner in the public schools of Minneapolis and in attending the Lymanhurst Heart Clinic, I have found a considerable number of children with partially decompensated hearts who are attempting to attend the common school. It is unfair and unwise to expect these unfortunate children to keep up with normal children. The child with the crippled heart becomes depressed, self-centered, and irritable in attempting to keep up to the average. A great deal has been done in this city for the blind, the deaf, the crippled, the

tuberculous and near tuberculous, and the under-nourished child, but nothing has been done for the child with a crippled heart. I am sure you will agree with me when I say that the child with a second-degree heart is more of a cripple than any of the others mentioned. From our work at Lymanhurst during the past three years where we have had some 400 children under our care, we have concluded that we can do more for this group of children by establishing a special school for those with second-degree hearts, that is, those with hearts that are definitely enlarged and show definite symptoms on doing moderate work. These children should be conveyed to and from school, as the crippled children are at the present time. In a special school they will be under constant medical supervision, they will receive a rest in the morning and afternoon, they will obtain special vocational guidance, they will have a full hot meal at noon, they will take part in special gymnastics under the guidance of a trained gymnast, and they will receive individual instruction, and will not find it necessary to compete with the normal child at any time. We feel that such a school is absolutely necessary in order to keep these children from constantly breaking down, as they are doing at the present time. We need both this special school and a convalescent home where it will be possible to refer children who need prolonged rest in bed under the most favorable conditions. I am glad to announce that Minneapolis will probably have a special class for cardiac cripples next year (1927). This class will probably be started at the Dowling School.

The prevention of heart disease in children awaits the discovery of the etiology cure of rheumatic fever. We can prevent heart disease in children only if we can prevent rheumatic fever. The intensity of the infection of the heart valves can be diminished by the proper treatment of rheumatic fever. Heart failure can be prevented by careful medical supervision, by special plans for the future from the onset of the impairment, but especially by the development of special classes in the public schools for all children with badly crippled hearts.

#### FURTHER STUDIES ON THE DEVELOPMENT AND SIZE OF THE HEART IN CHILDREN

By THOMAS ZISKIN, M.D.

The Roentgen ray examination of the heart has become an established routine. In adults we feel that it is one of the most important tests in



cardiac diagnosis. It gives us more definite information about the condition of the heart than any other sign. Definite standards have been worked out for the normal measurements for all builds and types, and typical heart forms have been recognized as diagnostic of various heart conditions. In children, however, the use of the Roentgen ray in cardiac diagnosis has not progressed as rapidly as in adults. The present investigation was undertaken for the purpose of studying the development and size of the heart in children and to help to establish roentgenography as firmly in the diagnosis of cardiac conditions in children as it is in adults.

Teleoroentgenograms were taken of the children at a distance of six feet. The phase of respiration was disregarded in taking the plates, as most observers feel that it is a negligible factor. Over 400 children were studied in this group and measurements of the hearts were made from the Roentgen plates. They were classified according to age, height, and weight, and the results for each classification were noted. In this way an attempt has been made to work out definite standards for heart measurements for children at all ages and at all heights and weights. It is true that there is a great variance in the size and shape of the heart in children. Some are of the broad, low-lying type, while others are of the long and narrow type. An allowance of 10 per cent above or below the average measurements at any given age or height, however, will include all the normal variations.

The development of the heart was studied by comparing the ratio of the various diameters of the heart to each other at each age, height, and weight, also the ratio of heart diameters to the chest diameter. The angle of inclination of the heart was also determined for each group. The prevailing opinion has been that the right border of the heart extends relatively further to the right in childhood and that the relative ratio between the median right diameter of the heart and the median left diameter is greater in childhood than in adult life. The results obtained in this investigation tend to disprove this. The ratio between the median right diameter and the median left diameter was found to be constant and approximately 50 per cent at all ages and heights.

The angle of inclination of the heart, which is the angle formed by the longitudinal and transverse diameters, was found to vary from forty-six degrees in the youngest and smallest group to fifty-two degrees in the oldest and largest group. It will be seen, therefore, that the heart which assumes a broad horizontal posi-

tion in early childhood, tends to assume a more vertical position in the chest cavity as the child grows and develops and the angle of inclination of the heart becomes broader.

The ratio between the transverse diameter of the heart and the internal chest diameter tends to diminish as the child develops, being 46 per cent in the smallest and youngest group and 40 per cent in the largest and oldest group. While it is true that the heart does not increase in size in direct proportion to the rest of the body, yet the difference in the percentage ratio of the transverse diameter of the heart and the internal chest diameter cannot be attributed entirely to this fact. Knowing that the ratio between the median right and the median left diameters of the heart is constant and that the angle of inclination of the heart increases as the child develops, we must assume, therefore, that the decrease in the ratio of the transverse diameter of the heart to the internal chest diameter is due mainly to change in the position of the heart as the child develops.

To summarize briefly we can say:

1. There is a constant ratio between median right and median left diameters of the heart. This ratio is approximately 50 per cent.
2. The right border of the heart does not extend relatively further to the right in childhood.
3. The ratio between the transverse diameter of the heart and the internal chest diameter diminishes as the child develops. This is due mainly to the change in the angle of inclination of the heart.

#### LOCAL ANESTHESIA AS AN ADJUNCT IN THE SURGICAL TREATMENT OF NON-TUBERCULOUS LESIONS IN TUBERCULOUS PATIENTS

BY STANLEY R. MAXEINER, M.D., F.A.C.S.

In order that non-tuberculous diseases may be properly studied and treated in this day of extreme specialization, it is important for a sanatorium caring for tuberculous patients to have men trained in *x*-ray, general medicine, and surgery either as members of its staff or as consultants. These members must co-operate fully with those of the staff who specialize in tuberculosis.

One must constantly bear in mind that parents with tuberculosis are subject to the same general diseases that other people may have, and that two or more diseases may exist in the same patient at the same time. The writer has seen



acute appendicitis go on to perforation undiagnosed in the presence of a bad fracture, pregnancy, and tuberculosis when it would have been recognized promptly if it had existed alone. We believe that every tuberculous patient with abdominal symptoms is entitled to careful study and a differential diagnosis when possible.

Parents presenting surgical lesions are referred to the surgeon who reviews the findings and makes his recommendations. A final consultation of gastro-enterologist, surgeon, and specialist in tuberculosis determines what course is to be pursued. In fact the chest specialist should determine finally whether the patient's pulmonary disease contra-indicates surgery. In conjunction with the usual clinical and laboratory examination we have used cholecystography with some satisfaction in our gall-bladder cases. The x-ray through the medium of the opaque meal and barium clysma helps to differentiate appendicitis from tuberculosis of the cecum and ileum. We have found the leucocyte count very high in some cases of tuberculous bowel, resembling appendicitis, and as a result we consider it of far less importance than in non-tuberculous subjects.

It is obvious that operations of necessity must be undertaken under adverse circumstances, while operations of choice, such as herniotomy, should be reserved for those in good condition. However, it has been a revelation to see how well tuberculous patients undergo surgery under local anesthesia. Even advanced cases have undergone extensive operations without any evidence of exacerbation of their pulmonary disease. Indeed, in some instances there has been actual improvement due to more enforced rest and the fact that any patient can combat one lesion better than two.

The writer, during the past two years, has performed fifty-four major operations for the following non-tuberculous diseases: appendicitis, recurrent, acute gangrenous with and without perforation; cholecystitis, chronic, subacute, hydrops with cystic duct stone and empyema of the gall-bladder; common duct obstruction due to malignancy; penetrating gastric ulcer which required resection; adhesions, post-operative, with and without obstructive symptoms; herniæ, inguinal, femoral, and post-operative; epithelioma of the lip with block dissection of the neck; goiter, exophthalmic, and toxic adenoma, and tumor of the breast. Three cases of acute mastoiditis were anesthetized for operation by our otolaryngologist.

In addition to these he has performed more than one hundred and twenty-five other major and minor operations for tuberculous and minor

operations for non-tuberculous lesions, such as hemorrhoids, epididymitis, empyema, thorocoplasty, etc.

Fifty-three of these fifty-four major operations were performed satisfactorily under local anesthesia alone. One case only required the addition of gas for a short time during secondary exposure of a common-duct obstruction due to malignancy. All of the other one hundred and twenty-five operations were done under local anesthesia alone. In no instance was there a post-operative pneumonia and in only one case, that of an acute streptococcal peritonitis following operation for a suppurative appendicitis, was there a post-operative death.

#### A COMPARISON OF THE PIRQUET, MANTAU, RING AND TUBERCUMET TESTS IN LYMAN-HURST CHILDREN

BY CHESTER A. STEWART, M.D., Ph.D.

AND

A. E. COLLINS, R.N.

As a result of a study of 218 children, it appears that the ring and tubercumet tests may prove of some definite value in differentiating to some extent between active and inactive types of tuberculosis. Particularly in children having positive Pirquet and Mantoux reactions combined with such findings as to justify a diagnosis of juvenile tuberculosis, negative ring and tubercumet tests probably indicate that the tuberculus focus is clinically inactive. In children having tuberculosis of bone and glands, a negative ring and tubercumet test probably indicates that the process is healed. Positive ring and tubercumet tests apparently are of significance only when these tests remain persistently positive in children who have positive Pirquet or Mantoux reactions, and who have no evidence of acute, nontuberculous infections.

#### CONCLUSIONS

1. In healthy children having negative tuberculin tests, the ring and tubercumet tests are uniformly negative.

2. In children not suffering from acute infections, but having positive Pirquet and Mantoux tests, together with such clinical findings as enlargement and calcification of the bronchial lymph nodes, slight occasional elevation in temperature, undernutrition and a history of exposure to tuberculosis but with no evidence of clinically active tuberculosis, the ring and tubercumet tests are negative. Under such circumstances, nega-



tive ring and tubercumet tests apparently are confirmatory evidence that the tuberculous focus is inactive and thus of definite clinical value.

3. In definitely active tuberculosis the ring and tubercumet tests usually are positive.

4. Positive ring and tubercumet tests are not specific tests for active tuberculosis, for they may become temporarily positive as the result of acute nontuberculous infections.

5. To be of significance the positive ring and tubercumet tests should be persistently positive. Under such circumstances when certain chronic nontuberculous infections such as pyelocystitis, osteomyelitis, and others are excluded, persistently positive ring and tubercumet tests should cause one to suspect strongly the presence of active tuberculosis.

6. A diagnosis of active tuberculosis on the basis of positive ring and tubercumet tests alone should not be made.

7. In making a diagnosis of active tuberculosis, the results of the ring and tubercumet tests should be used with and not to the exclusion of other established methods of examination.

8. Tests such as the ring and tubercumet reactions, which are known to be positive in cases of active tuberculosis and negative in healed tuberculosis, undoubtedly will prove of value when their limitations are fully understood.

#### Stutsman County (N. D.) Medical Society

The last regular meeting of the Stutsman County Medical Society was held on November 29, 1926. The applications for membership of Dr. E. F. Lang, of Montpelier, and Dr. W. R. Winn, of Jamestown, were accepted. The following officers were elected: President, Dr. F. O. Woodward, Jamestown, N. D.; vice-president, Dr. F. F. Lang, Montpelier, N. D.; Secretary and Treasurer, Dr. H. M. Berg, Jamestown, N. D.; board of censors, Dr. C. P. Buzzell, Cleveland, N. D.; delegate to the State Association, Dr. W. C. Nolte, Jamestown, N. D.; delegate alternate, Dr. D. W. Johnson, Jamestown, N. D.

The next meeting of the Society will be held the last Monday in January. H. M. BERG, M.D.

Sec'y of the Stutsman County  
Medical Society.

#### Second Annual Lymanhurst Banquet

The second annual banquet of the Lymanhurst Medical Staff was held December 4th, at the Curtis Hotel, with an approximate attendance of two hundred. The medical nursing and teaching professions were well represented.

Dr. F. E. Harrington, Commissioner of Health of Minneapolis, as toastmaster, typified that spirit of co-operation which has characterized the present health administration as one always ready to support scientific advance in medicine. Short speeches were made by Mayor Leach on behalf of the City of Minneapolis; by Dr. J. A. Myers, Chief of Staff of Lymanhurst; and by others.

The special speakers of the evening were Dr.

Kennon Dunham, of the University of Cincinnati, and Dr. Harris, of the University of Minnesota.

Dr. Dunham in a speech of felicitation praised Minneapolis for blazing new trails in tuberculosis work. Dr. Harris in a scholarly manner spoke on the problem of disease from the standpoint of the biometrician and left all his medical hearers with the desire for further papers in his important field.

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I desire locum tenens work in Minneapolis for any length of time. Best of references. Address 241, care of this office.

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Would buy used x-ray and fluoroscopic equipment. Must be of standard make. Will be examined by electrical engineer. State price in first letter with detailed description. Address 301, care of this office.

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Laboratory technician, with experience in blood chemistry, serology, and basal metabolism, desires position in doctor's office or hospital. Two years in college. Also can do clinical work. Address 245, care of this office.

#### Laboratory Technician Wants Work

Experienced laboratory technician desires position in Twin Cities or vicinity. Capable of doing blood counts, urinalysis, Wassermann, tissue staining, blood chemistry, and bacteriology. Also x-ray. Address 300, care of this office.

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In excellent location at a transfer point in Minneapolis, over a drug-store. I am compelled by sickness to leave the city. Office rent, \$35. Will sell furniture, etc., for \$350. New man will pick up some practice at once. Address 303, care of this office.

#### Labotechnician Wants Whole or Half Time Work

A graduate of the Ancker Hospital (St. Paul) laboratory with four years experience desires work in or outside of the Twin Cities. Can do all kinds of laboratory work, and can make herself useful in hospital, clinic, or office. Best of references furnished. Address 302, care of this office.

#### Locum Tenens Wanted

Physician is wanted to take care of general practice, mostly office work. Western Minnesota town, population 2,000. Modern office with complete Physiotherapy equipment. Privilege of purchasing office any time within six months. Address 253, care of this office.



# THE JOURNAL-LANCET

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## SALUTATION

THE JOURNAL-LANCET (its editor and publisher) extends to the physicians of the Northwest its hearty good wishes, hoping that they enjoyed a happy Christmas Day, and with a full expectation that they will have a prosperous New Year.

The editor is always very thankful when his editorials have been read, and they are open to the same criticism as any other writings are, to which he does not object. Doubtless he says many things that are not entirely satisfactory to all medical men, but it has not been in a spirit of vindictiveness, but in order to stimulate criticism and to bring down upon his head the wrath of the medical man or his commendation. Of course we all like to be commended for what we try to do, but those of us who are old enough know that destructive criticism is often interspersed with comment. To that the editor makes no objection. We feel that our large number of readers have been loyal and faithful in their adherence to THE JOURNAL-LANCET, and we are not trying to usurp any special territory. The interests of THE JOURNAL-LANCET are the interests of the medical profession as a whole, and the editor has not hesitated to comment upon the difficulties which we all meet with, and he regrets, as do all men, that there is sometimes a lack of harmony among medical men. Recently

there has been too much factional politics, which is destructive, and we have no doubt all hope for the time when all medical societies will be harmoniously interested, that they will lay aside their personal prejudices and all they may discuss and re-discuss in medical politics, and it is to be hoped they will all come down to a common basis, that basis which is good for the medical societies or the medical profession, and in that way only can we hope to accomplish the desirable.

In the larger societies of course many things come up that are disturbing, disturbing to the whole profession, and these things are the very issues that we ought to eliminate from our personal conduct. There should be less acrimony and less activity among divided forces. The individual idea should be disregarded very largely and only that which is good for medicine as a whole should be striven for by all members of every society with the one end in view, to accomplish the best things for the medical profession. Intrigues and underhanded methods should be discouraged and factions or factional opinions should be eliminated as far as possible from unnecessary medical politics. We should be united in our opinions in the next effort for the control of medicine in the State legislatures.

We must for the time being fight for our rights. Men who have prepared themselves assiduously for the practice of medicine certainly should be given preference to the interloper who is trying to get something over for his own particular creed, but this can only be done if we act as a united body after having cleansed ourselves of individual preferences.

## A SYMPOSIUM ON TUBERCULOSIS

For a long time THE JOURNAL-LANCET has fully realized that a disease so widespread as tuberculosis can never be well controlled without the aid of all physicians. In the last few years, therefore, it has carried in its columns many articles dealing with the diagnosis and treatment of this disease. The present number is devoted to a symposium by a part of the Medical Staff of the Lymanhurst School for Tuberculous Children.

This school is the only one of its kind in the United States and represents the realization of a vision of the present Commissioner of Health, Dr. F. E. Harrington. The Medical Staff consists of approximately forty physicians who devote their time to diagnosis, treatment, and investigative work in this line. Since the dedication of this institution, less than six years ago, more than four thousand children have been examined



by the Medical Staff and approximately eight hundred have received special care in the school.

The contributions of this staff to medical journals number more than one hundred. A number of the articles in the present issue of THE JOURNAL-LANCET are abstracts of papers which have been, or will be, published in full in special journals, such as the *American Review of Tuberculosis* and the *American Journal of Diseases of Children*. The papers constituting this symposium contain much valuable information on such subjects as "The Incidence of Tuberculous Infection in Minneapolis School Children," "The Prognosis of Tuberculous Infection in Infancy," "The Mode of Infection in Children," "The Healing of Pulmonary Tuberculosis in Childhood," etc.

THE LANCET takes great pleasure in presenting to its readers this practical information.

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#### WILLIAM R. MURRAY

As this issue of THE JOURNAL-LANCET is going to press, announcement is made that Dr. William R. Murray, of Minneapolis, passed away at 11:30 A. M., December 27, 1926.

It will be the verdict of all physicians who knew Dr. Murray that a very able physician and a very lovable man has passed away.

In due time the profession of Minnesota and the special societies to which Dr. Murray belonged will doubtless give expression to the esteem in which he was held and to appreciation of his scientific attainments; and the same will be published in our columns.

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#### NEWS ITEMS

Dr. Ivan Linsin has moved from Tuttle, N. D., to Buffalo, Wyoming.

Professor Windt, of the Radiological Clinic at Erlangen, Germany, spent a few days in Rochester during the week of December 12.

Dr. Smiley Blanton soon will begin a course of weekly lectures at the University of Minnesota (old Library Building) on the behavior problem of children.

Five fellows from The Mayo Foundation were in Minneapolis, December 17, taking oral examinations for advanced degrees in medical subjects at the University.

Dr. George O. Welch, who has been Superintendent of the Minnesota State Hospital for In-

sane at Fergus Falls for thirty-four years, has retired on account of ill health.

Dr. David A. Stewart, Superintendent of Manitoba Sanatorium (for the tuberculous) at Ninette, Manitoba, was in the Twin Cities last month to deliver several addresses.

The West Central Medical Association of Minnesota held a business meeting at Ortonville last month, when Dr. C. F. Ewing, of Wheaton, was elected president of the Association.

The sale of Christmas Seals in all parts of the country has been very large, perhaps the largest in the past two decades; and the fight against tuberculosis will be more effective than ever.

The Sioux Valley Medical Association, composed of physicians in South Dakota, Iowa, Nebraska, and Minnesota, holds its mid-winter meeting at Sioux City, Iowa, on January 18 and 19.

Dean Ford, Dean Lyon, and Professors Jackson, Litzenberg, Schlutz, and Bell of the University of Minnesota, were in Rochester, December 11, to attend a meeting of the Medical Graduate Committee of the University.

Dr. Jesse Long, of Minneapolis, who has practiced forty-five years in this city, forty-two of which were spent at the corner of Washington and Plymouth Avenues North, will leave, with his wife, on January 19, for a trip around the world.

Drs. C. F. and E. J. Wohlrabe, who are brothers of Dr. A. A. Wohlrabe, of Minneapolis, are now practicing together at Springfield. They are all graduates of the Medical School of the U. of M., as well as of the academic department of the University.

Minneapolis health and social organizations have called a Conference on Child Health and Parent Education, to be held in Minneapolis on March 8-10. Many physicians will be interested in and will attend the Conference. Dr. Richard Olding Beard is Secretary of the Conference.

The controversy over the necessary increase in the capacity of the Minneapolis General (City) Hospital, at a probable cost of \$2,000,000, and its relation to the Medical School of the U. of M. has become intense and somewhat ugly, as intense controversies over medical matters often become.

Dr. John F. Fulton, Jr., the son of Dr. J. F. Fulton, the well-known eye, ear, nose, and throat specialist, of St. Paul, is the author of a work on "Muscular Contraction," which was pub-



lished in November, and will be reviewed later in these columns. It is a volume of nearly 650 pages, with 1,000 names in the bibliography, is published by the Williams Wilkins Company, of Baltimore, and sells for \$10.

The U. S. Public Health Service is to give a thirty-day course of free instruction in the treatment of venereal disease, and to issue to those taking the course engraved certificates. The course will be given at Hot Springs, Ark., and several thousand patients will be present for treatment and clinical demonstration. Detailed information can be obtained from any State Health Officer.

Doctor David A. Stewart of Manitoba, Canada, spoke before the Hennepin County Medical Society at its noonday meeting on December 8. He also spoke before the Minnesota Trudeau Medical Society, the Minnesota Sanatorium Association, and the State Board of Control. Dr. Stewart is vice-president of the National Tuberculosis Association and enjoys an international reputation in the field of tuberculosis.

The Program Committee of the Grand Forks District Medical Society met at Grand Forks on December 10, to make arrangements for the coming State meeting which will be held early in May. The program as planned will be largely clinical. Several prominent outside speakers have been secured for the banquet and the general program. President Dr. N. O. Ramstad and Secretary Dr. J. G. Lamont were present at the meeting.

Dr. Samuel D. Flagg, retired, of St. Paul, died on Christmas Day, at the age of 88. Dr. Flagg was a graduate of Jefferson Medical College, Philadelphia, class of '59. He was a physician in the navy during the Civil War, after which he came to St. Paul, where he practiced over 50 years until he retired, a few years ago. Dr. Flagg was active in a number of fraternal societies, and was a charter member of the Ramsey County Medical Society.

The Central Clinical Research Club met last month in Iowa City where Drs. Gatewood and Roller had arranged a splendid program by the faculty of the University of Iowa. The membership in this club is composed from Chicago, St. Louis, Iowa City, Rochester, and the Twin Cities. The Club meets every six months, which provides all the members an opportunity to visit the schools of medicine and receive a program by the faculty in each city every two and one-half years.

Dr. Leonard C. Weeks, of Detroit Lakes, died on December 19, at the age of 57. Dr. Weeks began his medical studies at the University of Minnesota, but completed his course at Rush, graduating from that school in the class of '92 and soon became an instructor in anatomy and physiology at Rush. Although Dr. Weeks had openings to begin his practice in the city, he chose to work in the country and located in Detroit Lakes, where he at once became active in medical and civic work. His career as physician and citizen was honorable and useful, and from the first he was recognized as a leader of men.

## SOUTH DAKOTA NEWS NOTES REPORTED

By Dr. J. F. D. Cook, Secretary  
of the South Dakota State Medical Association

The President of the South Dakota State Medical Association, T. F. Riggs, M.D., of Pierre, made a trip of visitations to the district societies of the State as follows:

November 8.—The Mitchell District entertained the Rosebud and Miner County District Societies. The meeting was held at Mitchell. Dr. George R. Albertson, Dean of the Medical Department of the University of South Dakota, gave a very interesting lecture on "Sex Determination."

November 9.—The Sioux Falls District entertained the Yankton and Madison Districts. The meeting was well attended, and a splendid program was presented.

November 10.—The Watertown District entertained the Whetstone Valley District. The meeting was well attended, and a very good program was rendered.

November 11.—The meeting of the Aberdeen District Medical Society was held in the evening of November 11 in the Commercial Club rooms. Program followed.

November 12.—The Huron District Society entertained the Kingsbury District Medical Society.

At each of the above meetings Dr. Riggs gave a résumé of the various economical and legislative problems to be presented to the next legislature. He emphasized that the personal contact of the local physician with his home legislator would help solve the problem in bringing about adequate support of the measures to be submitted, and asking a full co-operation in acquainting the legislators of the needs that the proposed bills would meet.

Dr. J. F. D. Cook, Superintendent of the State Board of Health, accompanied Dr. Riggs and



presented the proposal of adopting the Model Vital Statistics law for South Dakota, stating that we now have adopted the standard form of birth and death blanks for reporting the same. Certain definite changes are necessary in the present law to admit South Dakota into the Registration Area for births and deaths. Emphasis was made upon the active co-operation of the physician in presenting this matter to the legislators in each county and selling him the proposition before the legislator goes to Pierre for the session.

A meeting of the Yankton District Society was held on December 15, 2:30 p. m., in the Chamber of Commerce. Dr. J. C. Ohlmacher, Director of the State Laboratories, at Vermilion, gave the following paper: "Clinical and identical efforts suggesting the possibility of arrest or cure in certain selected cases of diabetes mellitus: a plea for early recognition and treatment." Following this paper, Dr. J. F. D. Cook presented for a round-table discussion questions pertaining to public health administration and economic conditions of South Dakota. Annual election of officers. Dinner and smoker at 6:30.

Dr. and Mrs. L. R. Elward, who, during Thanksgiving week, made a visit to Chicago and vicinity, reported a pleasant trip and have returned to Ashton.

At the sixteenth annual conference of the Chicago, Northwestern Railway Surgeons, held in Chicago on December 16, Dr. R. E. Campbell, of Watertown, was elected vice-president of the Association.

Dr. Thomas F. Ballard, Director of the Brown County whole-time Health Department, tendered his resignation to the City Board to take effect December 31, 1926. It was with regret that his resignation was accepted. Dr. Ballard goes to New York City for the next two or three months for a postgraduate course.

Dr. P. V. McCarthy, of Aberdeen, has been elected whole-time director for the Brown County Health Department to assume his duties January 1, 1927. Doctor McCarthy has been a resident of Aberdeen for the past three years. The State Department welcomes Dr. P. V. McCarthy into the ranks of health workers for South Dakota and prophesies an efficient year's work while co-operating with the local physicians of his county in preventive health measures. His residence in the City of Aberdeen during the past three years makes him acquainted with the needs of his community.

Dr. M. C. Johnson, of Aberdeen, has made an extended trip to Philadelphia to attend the con-

ference of the Association of Military Surgeons and other medical points of interest. Dr. Johnson has now returned and is nicely located in his office at Aberdeen.

Dr. L. L. Parke, of Canton, was elected president of the Sioux Falls District Medical Society at a meeting held at the Carpenter hotel. Dr. Parke will succeed Dr. W. P. Roberts, of Sioux Falls. Dr. J. B. Gregg, Sioux Falls, was elected vice-president to succeed Dr. Parke, and Dr. L. J. Pankow, of Sioux Falls, was re-elected secretary and treasurer.

Doctor H. R. Hummer, of Canton, was chosen censor for a three year term, succeeding Dr. F. I. Putnam. There are three censors, one being elected each year. Drs. L. G. Hill and E. E. Gage are the other censors.

Dr. Daniel H. Bessesen, of Minneapolis, was the principal speaker, and showed motion pictures illustrating his talk on "Puerperal Infection and Its Prevention." Dr. Bessesen was a guest at the home of Dr. Pankow while in Sioux Falls. He was a classmate of Dr. Pankow's at the University of Minnesota.

There were about thirty members of the Society present at the meeting. Other business included the annual report of the treasurer and the appointment of several special committees, including one to consider an amendment for the election of honorary members.

An interesting and informing lecture on "A Study of Respiration" by Dr. Finn Koren, of Watertown, and the annual election of officers were features of the annual meeting of the Watertown District Medical Society. The officers elected for the ensuing year were the following: President, Dr. George Richards, Watertown; secretary-treasurer, Dr. A. Einar Johnson, Watertown; delegate, Dr. J. B. Vaughn, Castlewood; censor for three years, Dr. C. A. Williamson, Doland.

The lecture by Dr. Finn Koren on respiration showed the results of careful study and research on the subject and was appreciated by the Society, which requested Dr. Koren to continue the study of this subject and present a report at the Society's next meeting.

The election of officers was followed by an informal discussion on the welfare of the Society.

The next meeting of the district organization will be held in Watertown next April.

Dr. R. E. Woodworth, Superintendent of the South Dakota State Sanitarium, had charge of a clinic at the office of the Brown County Health Center, Municipal Building, in Aberdeen, Tuesday, December 14. This clinic was arranged by



the local health department of Aberdeen especially for those who have tuberculosis. The clinic was well attended, and fine co-operation of the local physician was reported by those in attendance.

### The Cass County (North Dakota) Medical Society of December 15, 1926

President Taintor presiding. The Secretary read the minutes of the previous meeting. The annual reports of the secretary-treasurer and the president were then read.

The annual election of officers was held with the following elected by unanimous ballot, President, Dr. H. B. Huntley, Leonard, N. D.; vice-president, Dr. W. F. Baillie; secretary-treasurer, Dr. T. H. Lewis; to the board of censors, Dr. A. C. Morris; Delegate to the state meeting, Dr. Rolfe Taintor; Medical Society representative of the Commercial Club, Dr. Rolfe Taintor.

Dr. Hilding Berglund, Professor of Medicine, University of Minnesota, gave a most delightful discussion on the subject of cancer and nephrosis. In dealing with each topic, he presented a résumé of the most recent research work, showing the possible practical applications in clinical medicine. His paper was most heartily received by the Society.

There were thirty-eight members present.

#### ANNUAL REPORT OF PRESIDENT, DR. ROLFE TAINTOR

In making an annual report I first wish to thank the members of the Society for their support and co-operation during the past year, and thank our secretary for his able and untiring work in the handling of his position.

The success of any medical society depends not only upon the administration of its officers, but on the co-operation of each member, not only in our meetings, but in our daily practice.

The ethical consideration of the brother practitioner will never be found wanting in the physician who assumes that it is his duty to treat his fellow practitioner as he would like to be treated.

Medical ethics never require damage to our patients, so that we may maintain a code. While we are in charge of a case our first duty is the welfare of our patient, no one would ever question this. But reports of patients who have been dissatisfied with the last physician may wreck more ethics than any one other factor. We do our brother practitioner a great injustice, also the profession as a whole, when we condemn him because of prejudiced statements made by a patient. It is poor ethics to gossip with the public about our own or others' patients.

There is no better way to battle the numerous cults of to-day than to show the public that we, as medical practitioners in good standing, are pulling together with one object in view "the welfare of our patients."

Of course we do not agree on all things; if we did there would be less progress in our profession, and if we had no competition most of us would retrogress. It is good competition that keeps us on our toes, reading journals, attending meetings, etc.

Our meetings this year have been very well attended, but I believe this could be improved upon. No matter if the paper of the evening is somewhat out of our line, given by a country practitioner or a city specialist, if we listen well, we are sure to gain

some good from it. Not only do we obtain something from the paper of the evening, but it is the fellowship of eating, talking, and smoking together that makes us realize the other fellow is a good sort, and willing to co-operate.

During the course of the year, we have had sixty-six active members on the roll. Three have moved from the city and one died, leaving now a total of sixty-two active members. As soon as our membership reaches sixty-three we will be entitled to three delegates to the State Association.

We have eight associate members among the physicians of Moorhead and the Veteran's Bureau. There are residing in the district, at the present time, thirteen physicians who are not members. At least four of these are or soon will be eligible to membership.

We have held seven regular meetings to date with an average attendance of thirty-five. One special meeting was held this fall to hear Dr. Cooper, of the American Birth Control League, with eighteen members present. The out-of-town speakers for the year were Dr. E. M. Hammes, of St. Paul; Dr. H. F. Helmholtz, Rochester; Dr. V. J. LaRose, Bismarck; Dr. A. J. Myers, Minneapolis; and Dr. J. P. Schneider, Minneapolis.

There is now on hand in the treasury a balance of \$191. The expenditures for the year have exceeded the receipts of \$320.51. This excess is accounted for somewhat by the lantern, which cost \$186.18. It is very evident that within the next year consideration will have to be given to the matter of increasing the income of the Society.

The following officers have served for the year 1926: President, Dr. Taintor; vice-president, Dr. Huntley; secretary-treasurer, Dr. Evans. Delegates to the State Association: Dr. Kent Darrow, one year; Dr. Hanna, two years. Board of Censors: Dr. Morris, one year; Dr. McGregor, two years; Dr. J. J. Heimark, three years.

Officers to be elected at this meeting are a president, vice-president, secretary-treasurer, one delegate to the state convention to replace Dr. Kent Darrow who is retiring, and one member to the Board of Censors for three years to replace Dr. Morris who retires this year. Dr. McGregor now becomes the censor for one year and Dr. J. J. Heimark for two years.

It is the belief of the Secretary that some effort should be made to revise our present constitution which was adopted several years past.

Financial Report of the Secretary and Treasurer, 1926:

Balance on hand, December 17, 1925	\$511.51
Dues received	690.00
	<hr/> \$1,201.51

#### Disbursements:

Paid to State Secretary	\$325.00
Meeting notices	34.83
Café and cigars	353.30
Expense of speakers	68.10
Telephone, flowers and miscellaneous	43.10
Lantern	186.18
	<hr/> 1,010.51

Balance on hand, December 15, 1926	\$191.00
LESTER J. EVANS, M.D.	
Secretary and Treasurer.	



# THE JOURNAL-~~THE~~ LANCET

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## CLINIC ON DIABETES\*

BY ROLLIN T. WOODYATT, M.D.

Clinical Professor of Medicine, Rush Medical College  
CHICAGO, ILLINOIS

I wish to express my appreciation of the privilege you give me of talking to you upon a subject which is more or less my hobby, and one which can be made dryer than the Spring has been in this country. If my talk bores you I trust you will feel no hesitation whatever about leaving.

The subject of diabetes is so broad that it is out of the question to undertake anything like a systematic presentation in the time allotted and within the limits of the patience of the audience. I can take up only certain phases of the subject, and in doing this I shall talk little about theory and not very much about laboratory tests, but mainly of clinical aspects of the problem of diabetes as it presents itself to the man who is responsible for the management and welfare of diabetic patients.

I presume most of those in the audience have under their care one or more diabetic patients. Unless they are different from other mortals they do not know all that could be known about these cases. They may know more about other classes of patients and diseases, for no one man can cover the whole field of internal medicine equally well. The thing I would like to do would be to bring out certain points that would touch some of you, so that when you go home and begin thinking about your diabetic patients, you may be able to do for these people one thing, or

possibly two or three things, better than you are doing them now. If I could accomplish this it would be all that I could wish. It will be to my purpose to make a preliminary statement of certain principles:

### PRINCIPLES

Diabetes is a condition in which sugar appears in the urine for certain reasons; that is to say, in diabetes sugar appears in the urine because of a delay in the utilization of sugar in the body. In plain English, we say the diabetic body does not burn sugar as fast as it should, with the result that some of the sugar supply gets away in the urine. The sugar in the urine is glucose. It is not lactose or levulose or cane sugar. The glucose that appears in the urine of the diabetic patient is not a new substance that would not be formed in the non-diabetic individual. It is part of the regular fuel of the body, which, in health, is almost entirely utilized but which in diabetes fails of utilization and comes through the blood into the urine. It is much like a black cloud of partly burned gasoline escaping from the exhaust of a Ford. That cloud may appear because the motor is over-filled with gasoline or because the spark is weak. The proper thing to do is not to feed in more gasoline but to let the motor burn up the amount that has accumulated, and then feed in more in proper measure. We might say that the diabetic patient has ignition trouble. The spark is insulin. In diabetes the ability to

\*Informal clinic before the South Dakota State Medical Association, Aberdeen, May 19, 1926.

produce insulin is limited. It will not rise to meet any demand, but only to meet limited demands.

Most of the insulin made in the body is made by the pancreas. This organ therefore may be compared to the spark plug. When it fails to perform its full normal function it may be due to trouble in the plug itself or to trouble in the battery. The pancreas is a gland under the control of the nervous system. The function of the pancreas may be greatly affected by nervous factors. A diabetic patient may be doing splendidly on a certain diet and then lose money on the stock market and then on the same diet may not do so well. Or he may have an old servant resign and show sugar the next day. Or he may be using his brain or his emotions too hard, without any of these other troubles. *Depressing emotions can depress the sugar-burning function.* This is not commonly known, but it is true. It may also be depressed by fatigue or infection, etc. The latter are things that everyone knows who has had any experience in the care of diabetic patients. However, *other things being equal*, the ups and downs of the insulin-producing function are determined by the *diet* and in particular by the load of glucose that the diet provides for the body to dispose of each day.

#### HOW TO MEASURE THE DEGREE OF DIABETES

There is only one sound and practical way to determine whether the glucose-using power of a given person is up to par or below, and that is *not* to measure the percentage of sugar in the blood. At the present time the profession and the public are taught to rely on estimations of the percentage of sugar in the blood. I know this. I know all about the value and limitations of blood-sugar estimations. I cannot now take up this problem in detail. I say the best way to tell how many grams of glucose the patient is burning in a day or an hour is to measure the number of grams of glucose that go into, and the number that come out of, the patient in the period of time under discussion. If he takes in 150 and excretes 10 grams he is burning or storing the difference, that is to say, 140 grams. This applies to normal individuals, as well as to diabetics, because, although we may talk very glibly about the urine being "sugar-free," we merely mean by that that when testing the urine with the ordinary qualitative test solutions, such as Haines' or Benedict's, the urine does not show what we call a positive test. But there is always sugar in the normal urine, and usually about the same percentage as in the blood. The reason we

do not find it is because there are substances in the urine which interfere with the qualitative tests for sugar. These interfering substances are not present (to the same extent) in the blood. Consequently it is easier to detect small traces of sugar in the blood than it is in the urine. Besides this, with the blood we commonly use a finer, more delicate test for sugar.

One of the steps in advance that has lately been made in the line of laboratory tests is the application to urine of blood-sugar methods, which enable us to measure the total output of sugar by a normal person in a day. When I talk about following the urine-sugar with blood-sugar tests applied to the urine, I refer to the Benedict Osterberg method, which is an application of the Benedict blood-sugar method; and the Folin-Berglund method, which is an application of the Folin-Wu blood-sugar method to the urine.

The advantage of following the output of sugar in the urine rather than the percentage in the blood is this: The normal individual on a diet having a glucose value of 400 grams will excrete in the urine one-half to three-fourths of a gram of sugar as shown by one of the above methods of examination. That amount is usually undetectable by the ordinary methods, and the urine in question is called "sugar-free." Even if there is a little more than this amount of sugar, say one and one-half to two grams, it may still be normal. However, any patient, even with a very mild diabetes, will excrete in the urine more than a normal amount of sugar on this diet or a lower one. If you follow such patients by a blood-sugar method you will have to puncture them at a certain time and make the blood-sugar analysis. This gives you the percentage of sugar in the blood at this time. Suppose that at 10:00 or 11:00 o'clock he should show a little excess of sugar both in the blood and in the urine, but the next night or morning nothing abnormal. If you measure the total amount of sugar in the twenty-four hour specimen of urine you will catch this temporary overflow. To catch it by the blood-sugar method one would have to make several punctures in the twenty-four hours in order to obtain an average or aggregate figure. To do this means discomfort and expense to the patient. Economically it is not feasible to do it in this way at a time when we have simpler and better methods; therefore I follow the status of my patients by measuring the glucose supply and the glucose excretion for the day, or other suitable period.

Where does the glucose come from that goes



into an individual's glucose supply for the day? It all comes in the end from the diet. We may think of a patient's diet as made up of proteins, carbohydrate, and fat, but none of the carbohydrates, proteins, or fats fail to put sugar into the body. All the utilizable carbohydrate goes over into glucose, some of the protein does so also, and even the fats produce in the body some sugar by virtue of their content of glycerine, so when we speak of the glucose value of a diet we mean the carbohydrate in grams, plus about 58 per cent of the protein in grams, plus some 10 per cent of the fat. The sum of these three items gives, roughly, the weight of glucose that goes into the metabolic mill in the course of the day, provided of course that none of the carbohydrate, protein, or fat of the diet escapes utilization and that no body carbohydrate, protein, or fat is broken down in excess of that eaten. When these things occur, calculation of the glucose supply for the day must be based on the quantities of carbohydrate, protein, and fat actually catabolized. In any event, the glucose which is introduced into the metabolic mill in a day and fails to come out in the urine that day is utilized or stored.

#### DIET ADJUSTMENT

The first problem in the care of the diabetic patient is to keep the glucose supply at some level which is adequate, but which falls within the man's using power. Keep the patient on a diet which keeps the urinary sugar below 500 to 800 milligrams (for adults), (that is, 10 to 15 mg. per kilo per day). One can make up many diets which will do this. The first thing a patient should know about his diet is the glucose value. This is particularly true if the patient is on insulin. If you are giving a diet having a glucose value of 150 grams of which, on his own insulin, the patient can carry 130 then the insulin you give him is calculated to carry the difference, in this case 20 grams.

As to the doctrine that we must always keep a diabetic patient "sugar-free." In general this is the right thing to do for this reason: when you give more glucose than a patient can handle in a day you are constantly stimulating and urging the insulin-producing apparatus to produce more insulin. Glucose stimulates this apparatus. When we give ten grams more than the patient can take care of it means that the apparatus is being run to its limit of capacity. It is being overloaded, and its function will deteriorate. If the patient never receives more glucose than he can easily dispose of, the tendency is toward a

recovery of function, that is to say, an increase of tolerance. Overloading makes for a decrease in tolerance; but when a patient has once permanently lost nearly all tolerance and is running almost entirely on artificially given insulin any way, it may be a great annoyance, or practical impossibility, to keep the patient sugar-free all the time. To do so will mean many restrictions, many doses of insulin, and many insulin reactions. In such cases it is better to let him run sugar and to avoid reactions. One then makes sure that enough sugar is burning to avoid acidosis, but pays less attention to the overflow.

CASE 1, presenting patient.—This patient demonstrates a different situation from that just referred to. (To patient): Do you have headache or pain anywhere?

PATIENT: My trouble has been neuritis.

DR. WOODYATT: Pain in the limbs?

PATIENT: Yes; I have been having it for nine weeks.

DR. WOODYATT: Was there any other trouble that would bring you to the doctor except pain in the limbs?

PATIENT: Nervousness. I think that was the first thing I noticed, and I felt weak.

DR. WOODYATT: How long have you been feeling that way?

PATIENT: I felt well until about nine weeks ago.

DR. WOODYATT: Did you think you had diabetes?

PATIENT: I have known I had for six years.

DR. WOODYATT: How did you find that out?

PATIENT: I went to the doctor, and he found it out.

DR. WOODYATT: You were then about fifty years old. Did you have thirst and frequency of urination and all that sort of thing?

PATIENT: Not especially.

DR. WOODYATT: Were you having any anxiety, or strain, or overwork at that time?

PATIENT: Overwork, yes.

DR. WOODYATT: This woman as we see her now looks to be in the pink of condition. Notwithstanding that fact we find that she has had diabetes, or sugar in the urine, for six years. Even after having it for six years she was led to consult a doctor for no characteristic symptoms of diabetes that she now recalls. The symp-

toms complained of were not distinctive of diabetes, and sugar was discovered in the course of a routine examination. During these six years she was not on a weighed and measured diet. Still, in spite of a sketchy dietary régime, and at the age of fifty-six we see her looking in tip-top condition. This glycosuria began at fifty, and with practically no dietary restrictions she still looks well. The disease has had every opportunity in six years to show its teeth if it has any. Beginning at that age, and in that way, we can say without any laboratory tests that she must have a rather high and durable sugar-burning power, so we could almost assure her at once on the basis of her story and present appearance that it would be possible to make her urine sugar-free, and possibly that she could be made free of these pains, wherever they are located, by means of a few simple quantitative diet restrictions. Her good condition is not the result of her having followed a fastidious quantitative diet. Evidently her disease has not been so wicked as to make that necessary for health and life up until recently.

This is a comparatively mild case, and the patient can probably be managed easily without insulin. In handling this type of case what I would do would be to tell the patient to take the time to find out whether she can be free of sugar on a diet having a glucose value of 150, 175 grams, and so on, and then teach her so that she will be able to manage her diet under home conditions as they actually are in such a way that she may retain her present strength and weight. This is an educational problem. The detail of it is the essential thing. If this patient came into the hospital it would be purely for educational purposes, so that she could be enabled to handle her own case intelligently and successfully.

The history shows that this woman, from time to time, has been found in a state of acidosis by her doctor, and that she has had what have appeared to be "close calls." How do you put these facts together with what I have just said about her having a mild type of disease? In this way: from time to time a mild case undergoes some physical or nervous strain or infection or other vicissitude. She develops "flu," for instance, and then excretes a large weight of sugar, goes into acidosis, and is then in danger. When the intercurrent trouble passes off the diabetic trouble becomes relatively mild again. What should she be taught? She should be taught an easy quantitative diet a step at a time. She should be taught the vegetable and fruit groups, which vegetables belong in the 5 per

cent group, which to the 10 and 20 per cent. She should be taught that oranges run 10 per cent; and strawberries, a trifle higher. I should be able to say to her, "Take 100 grams or 200 grams of such and such a vegetable group." She would probably say now that she did not know what a 5 per cent vegetable was, also that a gram or 100 grams meant nothing to her, that she does not know grams. But it takes only 3 minutes to change all that. (Shows patient a list of the 5 per cent vegetables, has her read it, gives it to her, demonstrates scale, and has her measure out 100 grams of water). Now, you see she knows 100 grams. The very necessary thing is to have a scale in the house. There is nothing hard about using it, and anyone can be taught exactly what to do. (Weighs slice of bread.) This slice of bread weighs twenty-one grams. It is no more difficult for a patient with a scale to say she ate twenty grams of bread than to say she ate a slice of bread—just a difference in the language. The glucose value of twenty grams of bread is twelve, with the ordinary wheat or rye bread. By using a gluten bread we could have a value of eight or ten in a slice this size. The disadvantages of gluten bread are that it costs several times as much, it does not taste as good, and when one is away from home in a hotel, restaurant, or dining-car, the gluten bread cannot always be obtained. If one is seen carrying around gluten bread it attracts attention and advertises one's disability. I do not use or advise the use of any of these things for this reason. If anyone sees a patient take a piece of bread the size of this he may say she is a delicate eater and let it go at that. If this patient wishes to omit this slice of bread at any particular meal and take fifty grams of potato instead, the glucose value of the meal will not be changed by the trade. In this way we may provide for variety. She may eat any food she desires, but she must know how much she takes.

It is very important in handling diabetic patients to make the diet conform, in so far as possible, with the food habits of the patient and to provide ample variety or the means of varying the diet. Nearly all people look on bread as the staff of life. At least some bread should be included in every permanent diet for psychological reasons, if for no other. I seldom establish any patient on a permanent dietary régime without providing for the inclusion of at least 20 grams of bread at each meal. This inclusion enables them to have their slice of toast with their coffee at breakfast, etc. The bread also



gives a vehicle for butter. The more natural a diet is the less often will it be broken. Doctors who complain that their patients break their diets are often to blame themselves. They prescribe diets so rigid and bizarre that no natural person can stand them indefinitely. Reverting to the case of plain bread in preference to a substitute such as gluten bread, really the main trouble with gluten bread is not so much the cost of the gluten bread or the advertising of one's disability, as it is the poisoning of the mind that its use implies. Patients think that if they cut out the carbohydrates they will not derive any glucose from their food, and that is not true. If we tell patients to cut out all white bread from the diet and eat nothing but gluten bread we will do them harm, for they will be hungry without their usual food and will take more protein to make up. Oftentimes in this way they will run up the glucose supply for the day as high as before. Then they will be on a diet hard to endure, but will get no returns for their privation.

This woman ought to be able to select a meal having a glucose value of 50 grams three times daily with normal foods, under home conditions as they are, and so accomplish her ends with little privation, provided she understands quantitative principles. She should be taught how to examine her urine for sugar, and to know when to be on the lookout for danger. If she should develop a "flu," or an infection of any kind, she should shorten the periods at which she examines her urine and at such times test for aceto-acetic acid, and if she finds it she should know what to do under those conditions. She should then go on an emergency diet which has been written out and placed in her possession. To make her safe is purely an educational problem, and not many hours of instruction are necessary. She should know thoroughly the glucose values of diets. She should know how to exchange articles to get variety without altering their glucose values. She should know the food groups. She should know how to use scales. She should know how to examine her urine. She should know what to do in periods when her diabetes is aggravated.

CASES 2 AND 3.—We are so fortunate this afternoon that we have two children, one three and a half, the other about four and a half, both with diabetes, but both in excellent condition.

This boy (presenting patient) has had the trouble for about two years, since he was a year and a half old. Naunyn has described a case occurring in the first two weeks of life. This

is the third case I have seen that started in the first two years. It is very rare to see cases develop and be recognized as early as this. Prior to the days of insulin, cases beginning as early in life as this seldom survived the first year, although under skillful management some went two to three or even five years or more. But most of them died quickly. That this child is here and in exceptionally good condition shows that the treatment has been effective. The other child has had the disease for two years. We can make no criticism of results of this sort. They speak for themselves.

The question that now comes up is: Where do we go from here? This mother is concerned and anxious because she now has great difficulty in keeping the urine sugar-free. You remember I spoke of the time after which it is no longer necessary or even feasible to keep the urine entirely sugar-free. This boy still gets six feedings a day, and is given insulin in three doses (morning, noon, and night), and still it is difficult to keep the urine sugar-free. How long is it going to be possible to continue with a program like this? Think of the work and anxiety at the home. Why is it now so difficult to keep the urine clear? If you inject a certain amount of insulin under your skin it will act for a certain period of time. Small doses reach their maximum intensity of action in about four hours, and are pretty well worn off in six hours, so after injecting insulin the curve of action goes up rather gradually to the third or fourth hour, and then falls off. When you put food in the alimentary tract the curve of absorption goes up rather steeply, so, unless you feed in just the right way, the two curves (food absorption-insulin action) would be misfits, one rising like this and the other like that (illustrating on the blackboard), and there is a corner here (indicating) where the glucose is in excess and there is sugar in the urine. Here (indicating) the insulin overtops, and there is an insulin reaction. The only way to prevent that is to feed so that the two curves match. When the adult individual with a relatively mild diabetes is fed we do not have this difficulty, for the discrepancies between the two curves are wiped out by the automatic regulation of the natural insulin-producing power that the body still retains, but no matter how fastidious the diet has been up to this time in a child of this age, now he has practically lost all of his natural insulin-producing power. He has left only the power to produce a little insulin from his own organ. Consequently he has little automatic regulation

of his insulin supply. Nearly all of the insulin that he lives on is given him from external sources. The supply is not automatically regulated. When the insulin supply overtops the glucose supply he will have a reaction. He will have glucose in the urine one hour, and within an hour or two he may have an insulin reaction. Experience shows that no one has ever been able to preserve the natural insulin-producing power longer than a certain length of time, with or without the use of insulin. The average duration of life following the onset of diabetes in the first decade in the days before insulin was about one and a half years. All clinicians failed to exceed that as an average. I thing Dr. Joslin told me that his cases in the first decade prior to 1922 averaged one and a half years, so no one should feel badly about a loss of tolerance over a period of one to two years in children, for it always happens. If any one should doubt this statement just remember this: This is 1926. In 1905 a certain number of children were born in the United States of whom a certain number were diabetic before they were ten years old. All of this vintage would be twenty-one this year if they had lived. If they had diabetes before they were ten, they had it before 1915. Insulin came on in 1922. Those individuals would have had to be kept alive for seven years to get into the insulin age. I know of cases that did this. If any of you know of anyone living around Aberdeen who is now twenty-one and who had diabetes before he was ten I would be willing to pay \$100 to see him. There may be such cases, but they are very rare. The children of 1905 who had diabetes before 1915 are not here to tell the tale. If anyone had succeeded in keeping them alive by any theory or practice until 1922 or 1923 many of them should be here now, for that would bring them into the insulin age.

This child has burned out his natural glucose-burning power, and I think nothing more can be done to restore it unless something new happens in the diabetic field. Under methods of treatment as they are to-day I do not expect any marked return of tolerance in cases like this, whether they are kept sugar-free or not. There is no telling what we may learn within the next few years, but I am speaking of the present. However, this boy can grow up and go to school, and be strong enough to play ball and skate and swim, and do everything a boy wants to do even if he has lost most of his natural sugar-using power. It is difficult to be giving seven measured feedings a day. He could not very well go to school when doing that. The thing to do

now is to get him on an adequate and correct ration, one that would be normal for a normal boy of his age, and to spare him, insofar as possible, the psychology of invalidism in childhood. I should put him on a pretty normal child's ration, giving him as high a percentage of fat and as low a percentage of glucose as would be palatable to a normal child, and otherwise treat him on a sound pediatric basis. The diet, of course, will have to be quantitative. I would give a sufficient amount of insulin to keep him out of acidosis. In this case it is not so much a matter of teaching the mother how to make the sugar tests in the urine, for there will be sugar in the urine much of the time. She must now be relieved of the anxiety that comes from her inability to keep the child free of sugar all the time. She must be instructed very explicitly as to what to do in case the boy develops a cold, when to be particularly on the lookout for acidosis, and what to do in case acidosis appears. She should be taught particularly how to test the urine for aceto-acetic acid.

The problem with the other child is much the same, and the same principles should be carried out as in this case. (Demonstrates the ferric chloride test on urine of one child. Outlines emergency procedure to check acidosis.)

CASE 4.—This gentleman, who has kindly consented to come over here, illustrates an interesting thing which probably is not sufficiently appreciated in medical circles generally. That is to say that in respect to surgical procedures diabetic patients are not so different from other patients as is often supposed. Every surgeon is afraid to operate on a patient with diabetes, and there is a good and sufficient reason for that, but diabetic patients can be operated on surgically under the same conditions as others, provided the operation is staged under proper auspices and under sound combined medical and surgical management.

This gentleman is forty-eight. He developed outspoken symptoms of polyuria, thirst, and so forth, about eight years ago. He then weighed 220 or 230 pounds, and was five feet ten inches tall. He is the type of man in whom we would not be surprised or shocked to find sugar in the urine. He has several brothers of the same physical type, large men of considerable weight, but he does not know that any of them ever had diabetes. This does not mean that none of them ever did, for they might have had it and not known it, or one who was doomed to develop diabetes might have died before it appeared or was known to others.



The fact that this disease developed in a man of forty, that he came from a family of the type in which this often occurs, that it was found because of symptoms which carried him to the doctor, and not accidentally during an examination for life insurance, leaves no doubt of the fact that the man has a true diabetes. This diagnosis can be made on the family history, the clinical history of the trouble, and the physical examination of the man as surely as by laboratory tests. It is confirmed by qualitative tests, but we would know he had diabetes if we had no chemicals at all. He shows a certain slight transparency of the skin. His color is good, but I have noticed that in these people it seems that we can see a little bit further into the texture of the skin than in normal patients. I would think that possibly he was diabetic from that.

TO PATIENT: Did you have a measured or qualitative diet at any time?

PATIENT: No, I ate everything that came along.

DR. WOODYATT: Have you been doing that ever since?

PATIENT: No.

DR. WOODYATT: How long did you get by with that?

PATIENT: I have been on a diet, but have eaten some potatoes and bread.

DR. WOODYATT: That shows that he has been on qualitative diet restrictions. This may reduce the glucose supply below an extreme, but I do not think much of qualitative-diet restrictions. Patients may get just as much glucose into their bodies by leaving out white bread and filling up with other things as if they ate some bread. There is often some reduction of the glucose supply on qualitative restrictions, but not a great deal as a rule. This man did pretty well physically on qualitative restrictions, from which we know that his disease was of not more than moderate severity. Otherwise he could not have done so well. However, he developed an appendicitis that came on with the usual symptoms. He was then put on a diet, and it was found that on a diet with a glucose value of 100 grams he still had nine grams of sugar in the urine. On account of the diabetes and because the symptoms of appendicitis were mild and quieting down under icebags, he went back home. But he soon had a recurrence of the trouble and was brought back and operated on successfully for appendicitis. On a fasting regime the urine

was watched at six-hour intervals. It showed sugar in the first period, and during the next six-hour interval he received a little insulin, and then the urine for that period was watched. As I understand it the urine for this period was sugar-free. If the patient had still shown sugar in those six hours the proper procedure would have been to increase the insulin for the next six hours, and so on. Never let a postoperative case go more than six hours without seeing what is going on, and if the diabetes is not controlled do something radical in the next six hours. If the urine is watched carefully at these short intervals a patient can be carried through safely and well, but let somebody go off duty for twelve hours, and the patient will often go into coma and die. Dr. E. C. Dudley once said, "If you make a diagnosis of appendicitis you have no business to use any judgment. If the operation is dangerous it is necessary; if it is not necessary it is not dangerous." Just think that over. The presence of a diabetes does not change it. One attack of appendicitis predisposes to another. If you soldier on the first you have the next one to meet—if you are lucky. If a diabetic develops appendicitis he should be brought in immediately, and put immediately on six-hour readings. The diabetes should be cleared up quickly, and the surgery should be done at the earliest possible moment, after which the patient should be put back on the six-hour schedule to see that he does not slip back into acidosis. This can be done. I have handled patients with the surgeon through all sorts of surgical conditions, but the internist and the surgeon both have to realize that the handling of a severe case through a surgical operation is an emergency *all the time*, just as much as a case of hemorrhage or labor, and that they have no right to go away and leave the patient for as long as six hours any more than they have a right to leave a patient in labor. Because diabetic cases are "medical" there seems to be a tendency toward the idea that they can be left for twenty-four hours. When that is done in complicated cases with acidosis it is all over.

I would like to leave one last thought in your minds in reference to the handling of diabetic emergencies, acidosis, and so forth, which will not take more than five minutes and which, I am sure, within a short time may spell the difference between life and death with some of your patients.

You all know the ordinary qualitative tests for sugar in the urine. When you are in an emergency, any emergency, with diabetes in any

person of adult proportions you can put the patient on a six-hour schedule. Imagine the twenty-four hours as a circle, like a clock, and divide it into four quarters, like a pie. Each quarter give 400 grams of milk. If a patient comes in at 10:00 o'clock empty the bladder at noon and begin. If it is going to be an operative case you may not want to be giving any food, so run it on the 6-hour schedule without food. Otherwise, give a fixed quantity of milk regularly every six hours. Test the urine every six hours. If you find sugar and aceto-acetic acid look at the patient for clinical symptoms of acid intoxication. What are they? The most important are (1) *increased frequency and depth of respiration*. Look at the chest to see if it is heaving twenty-four or twenty-five times a minute. If so, that symptom is present. (2) Slight flushing is another symptom. Notice whether the forehead is a little bit reddened. The patient may say he rode in an automobile and that is the effect of the wind. Never mind how he explains it, that symptom is present. (3) He may be a little bit dull in the mind, a little *retarded mentally*. (4) He may complain of *weakness*. Weakness, increased respiration, flushing, and mental retardation, four cardinal symptoms of acid intoxication. Examine the urine for aceto-acetic acid, and you will find it present.

I will right at this point test your patience long enough to do a test for aceto-acetic acid. I know it is old, and you may know it as well as I. I cannot do it ideally here, but take plenty of urine in a test tube, at least two-thirds of a tubeful. Take some 10 per cent ferric chloride solution and add a few drops to the urine. We will carry out this test on a specimen of urine which has just been passed by one of the patients you see on the stage. As the first drops of ferric chloride enter the urine they darken perceptibly. The drops darken. But as they fall through the urine and spread and diffuse, the dark color disappears and is replaced by a white precipitate, as the aceto-acetic acid first reacts with the ferric chloride and the phosphate of the urine then precipitates the iron and undoes the reaction first seen. Add a little more, and it darkens; shake it, and it becomes light again, that is, keep on adding ferric chloride a drop at a time and each time shake until the darkening begins to be permanent. We are now ready to go ahead. First get the interfering phosphates out of the way by filtering. The filtration need not delay you. (Filter with a large folded filter.) Now to the

clear filtrate we add another drop of ferric chloride, and it darkens. Successive drops cause more darkening. Finally with one more drop there is no further change. This darkening might be due to aspirin, but if so it would not fade out with heat. This patient has an acidosis. He is riding for a fall. He is in danger. Now is the time to act.

What do we do? This is not a surgical case. Put him on the six-hour schedule with 400 grams of milk each six hours. Begin at 6:00 o'clock this evening emptying the bladder, then give 400 grams of milk. If he has not been on insulin before and shows no symptoms of acid intoxication give fifteen units of insulin per 50 kilos. If there is increased respiration give sixty units per 50 kilos. At the end of six hours test the urine again. If there is still sugar, still aceto-acetic acid, step the insulin up and give twenty units. Watch another six hours until finally you obtain a sugar-free period. You then know how much insulin is needed to carry the patient six hours on 400 grams of milk. You are now in a good position to rearrange the diet on a three-meal schedule. If you found by running one of the six-hour periods that fifteen units was enough, sixty units would be enough for the twenty-four hours. You may now give him three feedings of milk A. M., M., and P. M., still six hours apart, during the day. But now give a third of the whole day's ration of milk (1,600 c.c.) at each feeding (i. e., 500 to 600 grams), and divide the day's dose of insulin into three equal parts instead of four, in this case 20 units before each of the three meals. This restores a normal program. You may now omit the midnight feeding and the midnight insulin dose, letting the patient run through the night without food or insulin. However, the first night you do this continue to examine the urine every six hours and if at midnight the urine showed acidosis you would give a small midnight dose of insulin (without food).

With these patients it is never advisable to let them go more than six hours without seeing what is going on. All patients showing acidosis should be watched in six-hour periods. If the last dose of insulin has not been sufficient, step it up in the next six hours and bring the acidosis under control. If you will follow this plan through surgical and other emergencies it will always give you time for study and consideration as to what to do next.



## SOME INDICATIONS FOR THE USE OF PHYSIOTHERAPY\*

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Physiotherapy is one of the latest additions to the field of medical therapeutics, and because of its newness it is frequently misunderstood, and is quite often either overworked or snubbed. The profession is largely divided among those who are overenthusiastic about physiotherapy, those who are pessimistic, and those who are trying to use it intelligently.

The entire field of physiotherapy has by no means been covered, and the maximum benefits which may be obtained are not yet known, but honest clinical observation and scientific study will determine in the future the limits of its usefulness.

In this short paper I am allowed only time enough to discuss, in a general way, three divisions of physiotherapy; the sinusoidal current, the actinic ray, and the medical diathermy.

The sinusoidal and wave galvanic currents are not identical, as is commonly supposed. The sinusoidal is a slow alternating current of low voltage and low amperage. Through the same pole the current is alternately positive and negative. The wave galvanic current is not alternating, but is always of the same polarity. The sinusoidal current rises from zero to maximum on the positive side and returns to zero followed by a similar rise and fall on the negative side. The interruption in the current is not complete, so that the reaction of degeneration is not produced, although distinct muscular contractions are visible. It is applied by testing the normal limb or part and determining the amount of current necessary to produce good contraction over each motor area. This amount of current is recorded. The corresponding motor points on the affected side are marked with a skin pencil, a size larger electrode is used, and not over two-thirds of the amount of current used on the normal side is turned on. A slow wave, two or three per second, is employed the first day for not to exceed three waves. The current is increased one wave per day until ten are given, and is then dropped back to three and repeated for another week. In cases of marked improvement the increase of one per day may be carried until twenty are reached, after which it may be dropped back to ten and repeated. The wave may be accelerated and the current increased

until it produces maximum contraction. Frequent tests with the Faradic current are advisable, and when response with it is good, treatment may be so continued. "It must be remembered that return of active motion sometimes precede the return of Faradic excitability." (Stewart, H. E.: *Physiotherapy*, page 40.) Traumatic paralysis, Bell's palsy, post-traumatic partial ankylosis, chronic constipation, atrophy from disuse, and general muscular atony are the chief indications for its use. Physiologically the sinusoidal current removes circulatory stasis and stimulates nerves and muscles. It is the newest of the electric currents and much pioneer work remains to be done in this field.

If a proper electrical current is forced through mercury vapor in a fused quartz tube it emits ultraviolet rays, ranging in intensity between 2,000 and 4,000 A. U. The amount emitted is about four times greater than the amount produced by the sun. Ultraviolet rays are of two varieties, called, for convenience, the "near" and the "far." Those closest to the color spectrum are the "near" rays, have the longest wave length and are the most penetrating. They enter the skin to a depth of about one hundred microns.

The "far" rays are the shortest and have the least penetration. In speaking, therefore, of ultraviolet rays, the wave length should in all cases be given, since the "near" rays have a quite different action from the "far" rays. The "near" rays have greater penetrating power and produce definite skin reaction, while at the same time the rate of metabolism is increased and there is a definite increase in calcium, phosphorus, and iron in the blood. The skin reactions are divided into three degrees of erythema and are designated stimulative erythema, regenerative erythema, and destructive erythema. A slight reddening is stimulative erythema; a more intense reddening is regenerative erythema; while the destructive erythema is an intense reddening accompanied by vesication and destruction of the epidermis.

The increase in the calcium in the blood following application of ultraviolet rays in diseased conditions has been carefully studied and conclusively demonstrated by competent workers at Johns Hopkins, Yale, Harvard, Columbia, and elsewhere. Upon their findings rests the clinical application of the actinic ray. Hamburger

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(*Biochem. Zeit.* 1910-24-471) in 1910 observed that calcium salts increase the phagocytic effects of leucocytes. Kastle, Healey, and Buckner (*J. Inf. Dis.*, 1913-12-127) have shown that calcium reduces anaphylactic reactions, while Novak (*Jour of the A. M. A.*, 1923) in studying hay-fever, bronchial asthma, and hyperesthetic rhinitis found that these conditions are often accompanied by calcium deficiency, and, when they are, are much improved by the use of the actinic ray in conjunction with calcium lactate and thyroid by mouth. Many years ago it was definitely established that bone, joint, and glandular tuberculosis are definitely benefited by the action of the actinic ray, whether derived from the sun or produced artificially. And Mayer (*Am. Review Tub.*, 1921) some years ago showed that tuberculous peritonitis yielded readily to the ultraviolet ray as also did tubo-ovarian tuberculosis. It was also pointed out by Novak that angioneurotic edema, chronic urticaria, some cases of eczema and psoriasis, and seborrheic dermatitis are anaphylactic reactions and respond well to the actinic ray. The fact that the actinic ray increases the basal metabolic rate, and the calcium content of the blood is an indication for its use in ununited fractures, osteoporosis, osteomalacia and achondroplasia, and kindred diseases.

The anemias of children, chlorosis, and secondary anemia of adults respond promptly to actinic ray because of its influence on iron metabolism.

Tuberculosis of the lungs is not quite as satisfactorily treated as other forms of tuberculosis and it must be remembered that great care must be used in its administration in this disease. Continuous high fever, cavitation with tendency to hemorrhage, and extreme weakness are contra-indications to its use, but if used must be used very cautiously and in small doses.

Pacini (*New Orleans M. and S. J.*, vol. 77, No. 8, February, 1925) states that "for reasons that are not yet clear, ultraviolet radiation has been found to do good in these conditions,—dysentery, influenza, diseases of the liver, diseases of the glands of internal secretion, chronic peritonitis, mucous colitis, disturbances of the menstrual function, furunculosis, herpes zoster, lupus vulgaris, scrofuloderma, acne vulgaris, and pruritus." He also says, in the same article, that "it must be remembered that the energy is very like the *x*-ray in many of its physical qualities. In fact, it may be regarded as an extremely soft *x*-ray endowed with a tremendous capacity to do chemical work." These rays are usually produced by the air-cooled lamp.

The "far" rays, of shorter wave length and less penetration, produce effects characterized by powerful chemical changes incident to superficial absorption and designated as "abiotic" or "bacteriocidal." At eight inches (20 C.M.) under "far" ultraviolet radiation, the following bacteria were killed in the time stated: diplococci 6 sec., staphylococci 12 sec., streptococci and pneumococci 15 to 25 sec., influenza b. 18 sec., diphtheria b. 10 sec., tubercle b. 12 sec., lepræ b. 15 sec., colon b. and typhoid b. 18 sec., and dysentery types in 20 sec. (*Pacini-Dental Summary* 1923-24). In action, the "far" rays, usually produced by the water-cooled lamp, may be divided into three actions, bacteriocidal, superficial stimulation, and counterirritation.

Under the class of bacteriocidal action its indications are local infection, ulcer, infected wounds, pyorrhea, furunculosis, carbuncles after drainage, erysipelas and parasitic skin diseases, as tinea, lupus, mycosis, etc.

Superficial stimulation is indicated in a number of conditions, but it must be borne in mind that the border-line between germicidal action and destruction is definite and that the time of producing each erythema must be definitely known for each individual lamp. In treating an open infected wound do not use the old ladies reasoning that "if a little is good, more is better," for there is only a minute between killing the bacteria and retarding the process of repair.

Counterirritation may be produced for the relief of pain in such conditions as neuralgia, myalgia, lumbago, pleurisy, and sciatica. Here a definite erythema must be produced, and the treatment must not be repeated until the reaction has subsided. The prompt relief of toothache has been reported from dentists everywhere by producing a definite third degree erythema on the soft tissues adjacent to the aching tooth.

The contra-indications for general ultraviolet treatment are high fever with the patient in extremis, tendency to hemorrhage as in tuberculosis, and high-basal metabolism rate. It should be remembered that under all circumstances the conjunctiva must be protected as it is very sensitive to the actinic ray.

Diathermy is the production of heat in the tissues by means of a high-frequency electrical current. The rapid reversal of the current precludes the possibility of producing a Faradic current reaction since the direction of the current is reversed before such reaction is possible. A feeling of warmth is therefore produced, the degree of which is regulated by the amount of current applied. The essential parts of a dia-



thermy machine are a transformer with a gap, condenser, meter, and cords for attachment, all on the secondary coil. The primary coil has a step-up rheostat. The current may be increased either directly by use of the rheostat or indirectly by opening the gap. The resistance which the tissues offer to the electrical current produces the heat, and those tissues which are pathological are, fortunately, those in which the greatest amount of heat is produced. Concentration of heat is controlled by the size of the electrodes. If two electrodes are the same size the heat is evenly distributed between them. If they are of unequal size the greater amount of heat is obtained close to the smaller one. Sampson's rule is to turn the machine up to seventy-five milliamperes per square inch of the smaller electrode.

I shall confine my remarks to medical or sedative diathermy. Generally speaking, medical diathermy is indicated wherever heat is indicated. But it should be remembered that it should never be used as a counterirritant.

The physiological action of diathermy is the dilatation of the capillaries and lymph channels and the production of a true hyperemia. Bier states that hyperemia has five distinct effects: (1) analgesic; (2) bacteriocidal; (3) absorptive; (4) solvent; (5) nutritive.

By dilatation of the capillaries and lymphatics, stasis and congestion are relieved, and with a subsequent reduction of edema and swelling there is relief of pain.

Its bactericidal powers are dependent upon the fact that most bacteria have a certain temperature at which they develop best. Any increase in this temperature either retards their growth or kills them. For instance, the gonococcus is killed in six or eight hours at 104°F., in thirty or forty minutes at 108°F., and in three or four minutes at 113°F. It is estimated that the skin will stand 118°F. for one hour or more and that the deeper tissues will stand 120°F. to 125°F. for the same length of time. The urethra will stand 112°F. or 113°F. for an hour and the cervix uteri 117°F. for forty minutes. Ample time is, therefore, given for actual destruction of the gonococcus by heat. Other bacteria are killed by longer or shorter exposure to the same or greater amounts of heat.

The absorptive powers of diathermy are due to the relief of stasis, promotion of circulation, and the re-establishment of proper exchange of fluids between the swollen tissues and the blood stream. As the circulation is restored water is withdrawn, cloudy swelling subsides, and water-

soluble products and toxins are carried away.

Dissolution of scar tissue, adhesions, and even recent calcareous deposits is possible with diathermy, because of the swelling produced by heat and the increase in the blood supply. These tissues are most resistive to the passage of the current and consequently produce the most heat.

Any process which increases the circulation and the supply of lymph will increase nutrition. During the diathermy treatment, the blood flows more rapidly through the part, some temporary edema takes places, and the tissues are noticeably swollen. The heat is retained for some four or five hours, gradually being dissipated by continuity of tissue and the venous blood stream, and the swelling gradually subsides.

It will be impossible to give a complete list of diseases in which diathermy is useful since Tindall, in his "Partial Index of Physiotherapeutic Treatment," mentions eighty-six diseases under this head. Sampson, who is a trifle over-enthusiastic, says it can be used for almost everything. I, therefore, shall mention only those conditions in which I have had extensive experience and uniformly good results.

Among the diseases of the circulatory system which offer a definite field for diathermy are hypertension, coronary sclerosis, angina pectoris, and phlebitis. In hypertension, and in the heart conditions mentioned, the current must be kept low, and the treatment must not be repeated too often, or general weakness will result. No patient seen in medical practice is more grateful for relief from distress than the one with angina pectoris, and diathermy will relieve him. Hypertension from unknown cause and from generalized arteriosclerosis should be treated by auto-condensation. Hypertension from renal disease will be mentioned under genito-urinary diseases.

The bone and joint diseases most curable by diathermy are acute and chronic gonorrheal arthritis, post-traumatic ankylosis, septic arthritis, osteo-arthritis, bursitis, and osteomyelitis. If there is no suppuration present it is not necessary to establish drainage before instituting treatment. But, if there is suppuration, free drainage must be established to insure good results and to avoid spreading the infection. The only exception to this rule is acute gonorrheal arthritis. The gonococcus is so readily destroyed by heat that treatment may be started at once. The swelling and pain incident to a sprained joint will be almost instantly relieved by diathermy and elevation of the part.

Acute and chronic sinusitis and acute and chronic catarrhal otitis media, and the deafness

resulting from the latter, respond very readily to diathermy. In treating catarrhal deafness it is my custom to put a small electrode behind the ear, over the mastoid process, and use a much larger electrode over the opposite malar region. I find that this produces better results than are obtained by applying a small electrode to each external auditory meatus.

The diseases of the respiratory tract which are benefited by diathermy are important but not numerous. Some cases of asthma, but not all, show marked improvement. Unresolved pneumonia is benefited and usually clears up in a week's time. But it is in lobar pneumonia that diathermy has won its laurels in lung diseases. I have never seen a case of pneumonia that has not cleared up promptly if the diathermy treatment is started within forty-eight hours of the onset of the disease. It is now compulsory in Army and Navy Hospitals to treat this disease with diathermy. The relief is so prompt that frank pneumonias often resolve in less than five days when treatment is instituted promptly.

Many diseases of the genito-urinary tract respond to diathermy, and upon its use in these conditions several physicians have attained national prominence. Gonorrhea in all its manifestations, on account of the ease with which the gonococcus is killed by heat, stands first on the list. Endometritis, endocervicitis, cystitis,

epididymitis, orchitis, salpingitis, and their complications also may be mentioned. To the surgeon I recommend diathermy as the best means available for putting the organs of the female pelvis into proper condition for operation, provided they are not malignant. Acute and chronic kidney lesions are indications for diathermy, and each kidney may be treated individually, or both may be treated at once. In arterial hypertension due to chronic nephritis better results are obtained by placing a large mesh electrode over the abdomen with the patient on the autocondensation couch than can be obtained by autocondensation as usually given. The current must not be raised to the maximum, but must be kept under 1,000 milliamperes.

Acute catarrhal jaundice, acute gall-stone colic, parotitis, abdominal adhesions, lumbago, neuritis, torticollis, osteitis, myositis, synovitis, and pleuritis also respond very well to diathermy.

The contra-indications to the use of diathermy are pus undrained, hemorrhage, and subcutaneous emphysema. It is obvious that the pregnant uterus, the lungs in pulmonary tuberculosis, freshly broken bones, and empyema of the chest, gall-bladder, or sinuses should not be treated with diathermy. In subcutaneous emphysema the presence of air under the skin interrupts the conduction of the current and severe burns may result.

## A BRIEF DISCUSSION OF THE SIGNIFICANCE OF RECTAL BLEEDING\*

BY CHARLES B. WRIGHT, M.D.

AND

K. K. SHERWOOD, M.D.

MINNEAPOLIS, MINNESOTA

Our usefulness to our patients and our professional reputation depend, not so much on what we know, as on the thoroughness with which we apply our knowledge. This particularly applies in the treatment of conditions which are common and which, as a rule, are not serious. Rectal bleeding is such a condition. In reviewing this subject in text-books one finds long detailed discussions of how to differentiate cases based on the age of the patient, the amount, chronicity, relationship of bowel movements and pain, or other constitutional symptoms. I do not wish to minimize the value of a careful history, which is, as a rule, entirely too brief, but I do wish to emphasize the im-

portance of palpation, which is so simple and so often neglected, and inspection, which has been made so easy by the modern proctoscope, and also, to emphasize the importance of a careful general history and examination, that we may have a proper understanding of those cases where rectal bleeding is only a symptom of an underlying general disease. For the sake of clearness let me illustrate what I mean by the following cases:

A young man, twenty-six years old, had a history of bleeding for a period of six years. He had been treated for hemorrhoids at various times, which he had both internally and externally. He would have gushes of bright-red blood following defecation which was sufficient at times to produce marked weakness. On exam-

\*Presented at the Annual Meeting of the Northern Minnesota Medical Association, at Crookston, Minn., August 9 and 10, 1926.



ination this man showed a slight but definite jaundice, a palpable spleen and a definitely enlarged liver. The hemoglobin was 26 per cent, and his anemia was of the typical secondary type. He showed, in addition, an increase of bile, an increase of bilirubin in the blood serum, and increased fragility of the red cells with a history of anemia in one of his parents. In other words, he had a hemolytic jaundice.

The second case was that of a man who had suffered for months with rectal bleeding of a marked degree. Associated with this weakness he had progressive anemia. He had had one operation for hemorrhoids under the impression that his anemia was due to bleeding. This man's blood showed a classical picture of pernicious anemia. He had a definite glossitis, achlorhydria, and definite neurologic findings of changes in the spinal cord.

The third case was that of a man complaining of bleeding at defecation for three months. He had had, however, periods of bleeding two or three times a day and three or four times a year for a number of years. Twenty-five years before he had had a marked hemorrhage from the lungs, lasting intermittently for two weeks. On examination the proctoscope did not reveal any lesion. His history, however, showed that he had shortness of breath on exertion for some time. He was somewhat cyanotic, his heart and lungs were negative, his blood pressure normal. Repeated examination of his blood, however, showed a hemoglobin constantly above normal and the red count varying from 5,500,000 to 7,850,000. This made a diagnosis of polycythemia vera.

Mills has recently given us a convenient classification of the causes of bleeding in a general way.

#### GROUP 1. HEMORRHAGES FROM PHYSICAL CAUSES.

(a) *Accidental trauma*.—External injuries, skull fracture, rupture of an organ (liver, spleen, kidney, etc.), bony fracture with perforation of a vessel, ectopic pregnancy with rupture, epistaxis from injury to nasal mucosa, post-partum bleeding, placenta previa, etc.

(b) *Congestion and venous rupture*.—Hemorrhoids, esophageal varices, pulmonary hemorrhage in lung, congestion from heart disease, menorrhagia in most cases, spontaneous epistaxis, bleeding accompanying many tumor growths, etc.

(c) *Arteriosclerosis and hypertension*.—Apoplexy, epistaxis.

(d) *Surgical bleeding*.

#### GROUP II. HEMORRHAGES AS A FEATURE OF OTHER DISEASES.

(a) *Infectious conditions of chronic or semi-chronic character*.—Pulmonary hemorrhage in tuberculosis, nasal or intestinal bleeding in typhoid fever, peptic ulcer, epistaxis in such chronic conditions as arthritis, furunculosis, and others.

(b) *Malignant fevers*.—Diphtheria, measles, smallpox, influenza, and others at times.

(c) *Anemia*.—Pernicious anemia and rapidly progressive secondary anemia.

(d) *Leukemias*.

(e) *Jaundice*.—Due to accumulation of bile salts in the blood.

(f) *Metabolic disturbances*.—Scurvy and severe malnutrition.

(g) *Tumors*.—Particularly carcinoma, in many parts of the body.

#### GROUP III. HEMORRHAGES IN THE TRULY HEMORRHAGIC DISEASES.

(a) *Hemophilia*.

(b) *Purpura*.—Of the truly thromboplastic type.

(c) *Melena neonatorum*.

In glancing over this list one gets some idea of the number of conditions in which rectal bleeding may play a part. It is true that, as a rule, there are multiple hemorrhages or some other outstanding features in the history or physical examination, which should attract our attention. There are, however, a certain number in which rectal hemorrhage stands alone. It is customary to look upon bleeding from hemorrhoids as a common cause of anemia. We reviewed the cases of hemorrhoids which had been admitted to the University Hospital with this point in mind. There were 176 cases. Of these 78, or 44 per cent bled. A comparison of the hemoglobin in the bleeding and non-bleeding cases was as follows:

Hgb.	No Bld.	Bld.	Bld. plus
40-50	3.5%	3.1%	4.8%
50-60	5.3	4.7	4.8
60-70	19.3	10.9	10.7
70-80	21.0	20.2	20.0
80-90	40.2	34.3	34.5
90-100	10.5	18.7	17.8
100	11.1	7.8	7.1

This small series of cases shows that the lower hemoglobin values were somewhat more common in the non-bleeding cases. This would

indicate that some other condition than the bleeding had an influence on the hemoglobin. In this connection we thought it might be interesting to review our cases of pernicious anemia. Sherwood found that there were 104 cases and in 8, or about 8 per cent, rectal bleeding was a prominent symptom, and two cases had been treated for bleeding hemorrhoids alone for some time previously to admission to the hospital. In 15 per cent there was a history of bleeding from one or more of the orifices of the body. This would indicate that one should not take for granted that bleeding is necessarily the cause of anemia, certainly not of the more severe grades.

In 19 cases of cirrhosis of the liver, we found that bleeding was mentioned in only 1 case, and that was a case of the hypertrophic type. This of course is too few cases from which to draw conclusions, but it was surprising to me, because my impression had been that bleeding hemorrhoids were a quite frequent accompaniment of liver cirrhosis.

When one comes to the question of bleeding in its relation to local pathology in the lower bowel, cancer is the condition which is most serious and which should be detected at the earliest possible moment. Buie, of Rochester, in an analysis of 1,937 cases of cancer of the rectum, finds that one in every five had been treated for hemorrhoids previous to admission to the Mayo Clinic. He also finds that approximately 40 per cent of these cases had bleeding. David and others have estimated that 75 per cent of rectal cancers can be felt by the palpating finger. This would leave 25 per cent of the cases which cannot be recognized by this method alone and would correspond somewhat grossly to the cases which were not recognized in Buie's series. It would be interesting to know the situation of that group which had not been recognized to see if most of these cases were not in the group high up in the rectum. It seems to me a very serious reflection on the medical profession when so large a number of cases of malignancies are not recognized in a location where inspection by means of the proctoscope adds so materially to our accuracy in diagnosis. This is especially true, knowing as we do the splendid results from early surgery in this location.

In conclusion, I would like briefly to relate one of my own unfortunate experiences which teaches something about intravenous medication, and which aroused considerable uncertainty in my mind as to just how long a cancer may be

present in the rectum before disturbing the patient in any striking way. This patient was a man, fifty-three years old, who came to me in September, 1919, with a history of asthma for ten years and for the past two or three years blood in the stool on various occasions. Digital examination at this time was entirely negative, and his bowel troubles promptly cleared up on a bland diet and chalk mixture. In January, 1920, he consulted me in regard to his asthma. At that time his bowel condition was normal, although he had been on a careful diet since rectal examination was made. He returned again in November, 1920, about ten months later, with the statement that he had noticed blood and slime in his bowel movements for two or three months. He also had some bearing-down pain in his lower abdomen. On rectal examination I could feel a small hard mass high up in the rectum. Proctoscopic examination showed this to be carcinoma. At operation an extensive carcinoma was found, with some suspicious glands.

A resection was performed under local anesthesia on account of his lung condition and the anastomosis made. This patient went back to the ward in good condition, but the operator's assistant felt he should have more fluids and ordered 1,000 c.c. of salt solution intravenously, and the patient promptly died, complaining of burning sensation all over his body. I have always been unhappy about this patient for two reasons: first, I cannot but feel that had a careful proctoscopic examination been made on either of his previous appearances, something would have been found, either the cancer itself or some condition which may have preceded it; and the second reason was the giving of the large amount of intravenous salt solution which may have increased the blood volume too much for a somewhat weakened heart, or the solution itself may have been at fault, as suggested by the intense burning and the promptness of the death.

In conclusion, may I reiterate, rectal bleeding may be present in serious local disease of the lower bowel. It is not infrequently present in serious constitutional diseases, and, finally, no matter how profuse it is it should never be accepted as the cause of severe anemia until all other causes have been carefully eliminated.

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## OSTEOMYELITIS\*

BY M. J. KENEFICK, M.D.

ALGONA, IOWA

On a recent visit to our University Hospital at Iowa City I was informed by one of the attending surgeons that about 80 per cent of the cases of osteomyelitis admitted to the hospital had been diagnosed as rheumatism by the physician first called in attendance. This is a severe reflection upon the profession in our state, as only cases from Iowa are admitted.

The above statement is my apology for writing this brief paper.

For the purpose of this discussion we shall consider this disease in two stages, acute and chronic. Of all the acute infectious diseases demanding early diagnosis and prompt surgical intervention, none, not excepting acute appendicitis, is fraught with more disastrous consequences in treatment than osteomyelitis.

Pathologists are now agreed that the infection reaches the long bones through the blood stream. That the disease is essentially one of childhood is explained by the fact of the free blood supply to the long bones in children. The offending organism in the majority of cases is the staphylococcus aureus.

While an understanding of the pathology of any disease is essential to its rational treatment, we, as general practitioners, are more concerned about *diagnosis* and *treatment*.

## DIAGNOSIS OF OSTEOMYELITIS

A correct diagnosis of any malady is a prerequisite to rational treatment. Without a correct diagnosis we are only groping in the dark. In all branches of medical practice, the importance of diagnosis is everywhere emphasized. Witness modern teamwork where every diagnostic method is exhausted before treatment is begun.

Progress in treatment has come not alone through a *correct* diagnosis, but through a *correct* early diagnosis. Our treatment of tuberculosis was of little avail until we learned to make the early diagnosis. The same may be said of appendicitis. It is now the exception to find a general practitioner who does not make an early diagnosis of acute appendicitis. With the exception of acute conditions arising within the abdomen calling for surgical intervention, there

is no condition in which the *early* diagnosis is so important and in which delay is so fraught with disastrous consequences as in acute infectious osteomyelitis.

Samuel Gross, writing half a century ago, said: "Endostitis can not be considered otherwise than as a dangerous malady; for when severe or widespread it is apt to cause extensive necrosis, but it may destroy the patient by the induction of phlebitis in the principal veins of the corresponding limb and abscess of the different viscera, especially the lungs and liver." Gross remarks in this connection that, "if there is reason to apprehend the existence of medullary abscess, as there will be if there is deep-seated, aching, gnawing, or boring pain, with edema of subcutaneous cellular tissue, the surgeon must not hesitate to cut down upon the matter with a small trephine as the only chance of averting still more serious consequences." It is a long way from Samuel Gross and his clear clinical description to our present-day pathology and bacteriology of osteomyelitis.

While the x-ray and microscope are valuable aids in diagnosis, acute infectious osteomyelitis can, and should, be diagnosed early, single-handed and alone by any general practitioner. If we keep in mind that the usual mode of entrance of germs to the seat of disease is through the blood stream, and remember the peculiarities of circulation of growing bones, we have a rational explanation of the frequency with which pyogenic foci become located near the epiphyseal bones in children and young adults.

A few simple facts constantly borne in mind should lead us to an early diagnosis:

1. That acute osteomyelitis is a germ disease.
2. That the symptoms are essentially those of acute infection and sepsis.
3. That the disease is confined to a large extent to children below the age of puberty.
4. That the onset is usually announced by a chill followed by high fever and rapid pulse.
5. That the focus is generally in one of the long bones, with intense local pain, and can generally be discovered early.

In searching for the tender point, firm, continued pressure should be made in the vicinity of the suspected epiphysis.

So long as we find many cases of acute osteo-

\*Presented before an Upper Des Moines Medical Society and the Sioux Valley Medical Association at Lake Okoboji, Iowa, July, 1926.

myelitis diagnosis as rheumatism, and the innocent sufferer drugged with salicylates and so-called antirheumatics, just so long must we continue to hammer away at early diagnosis. Rheumatism is the diagnosis of the lazy, slip-shod, snap-shot doctor.

Having made an early diagnosis the treatment should be immediate operation if a satisfactory outcome is to be obtained.

As to the nature of the operation, surgeons of experience are not all agreed. Some advise simply incision through the periosteum, down to the bone, and reflection of periosteum at site of infection. The majority of American surgeons, however, advise opening the cortex with drill, trephine or chisel. All advise against any curetting of medullary canal in the acute stage, as the infection may be easily spread.

The after treatment should be directed to the sterilization of the wound. Most surgeons now employ Dakin's solution.

Dr. Ochsner, in a review of two hundred cases, published in 1924, about one year before his death, states that his experience justifies the following conclusion:

1. In every patient suffering from pain in any bone, the latter should be carefully palpated at once.
2. Pain upon pressure over a bone indicates the presence of osteomyelitis or periostitis.
3. The earlier this is demonstrated the less destruction will occur if operated on immediately.
4. The operation should consist in splitting the overlying tissues down to the bone, through the periosteum.
5. The incision should extend beyond the painful area above and below.
6. The periosteum should be loosened to one or two cm. on each side of the incision.
7. As a rule, this should be the extent of the primary operation.
8. In rare cases of very circumscribed in-

fection, the infectious area may be very carefully excised, care being taken not to spread the infection.

9. Hot, moist dressings, with electric light treatment, hasten recovery.

10. The shaft of long bones should never be removed until involucrum has been formed.

11. The primary focus of infection should always be determined, if possible.

12. As soon as the patient has recovered from the acute operation, the primary focus of infection should be removed, if possible.

The diagnosis of chronic osteomyelitis is not attended with any special difficulty. It is usually the result of a neglected acute case. Here the x-ray, while of little or no aid in the acute case, easily furnishes the most valuable aid to diagnosis. We should be careful to exclude syphilis and malignant growths of bone.

The surgical treatment of chronic osteomyelitis must be radical to accomplish a cure.

Within the past two years, two Chicago surgeons, J. Rawson Pennington,\* surgeon to Columbus Hospital, and Dr. Max Thorek,† Surgeon-in-Chief to the American Hospital, have published reports on the treatment of osteomyelitis and other chronic infections by the use of aluminum, potassium nitrate compound, applied locally. I have had no experience with this treatment.

When we stop to consider the many complications of this disease, it may further be termed a terrible affection, a disabling disease, which, if improperly treated may last the time of the patient's natural life, if it does not shorten his days. There are few diseases of childhood which it is so important to recognize early, and there are few, if any, which bring such satisfaction to the surgeon and the patient when they are recognized early and treated properly.

\*Surgical Journal, September '23.

†Illinois Medical Journal, August '25. *Annals of Surgery*, 1923, Volume 77.

## IN MEMORIAM—JOHN WILLIAM FREEMAN\*

By F. E. CLOUGH, M.D.

LEAD, SOUTH DAKOTA

For many years there were two outstanding characters in the South Dakota Medical Society: Dr. F. A. Spafford, of Flandreau, and Dr. J. W. Freeman, of Lead. Three years ago it was the

duty of Dr. Freeman to stand before this Society and eulogize his friend of forty years, Dr. Spafford, who had just passed to his reward. To-day it is likewise my duty to perform a similar function in honor of Dr. Freeman, who passed away three month ago.

\*Presented at the Forty-Fifth Annual Meeting of the South Dakota State Medical Association, held at Aberdeen, S. D., May 19 and 20, 1926.



Dr. John W. Freeman graduated from the Medical Department of New York University in 1879, served an internship at Bellevue Hospital and later was assistant to Dr. Prince at Jacksonville, Ill.

He came to Dakota Territory in 1882 as a contract surgeon with the United States cavalry stationed at Ft. Meade, where he served more than a year. At the conclusion of this term he moved to Terraville, in the Black Hills, and became associated with Dr. D. K. Dickinson in mining and general surgery. After a few years in this town he moved to Lead, which remained his home until his death.

Dr. Freeman was a skilled microscopist. When he first came to the Black Hills he brought with him a binocular microscope, which was his constant companion for years. When I first became associated with him, in 1902, he had boxes of specimens he had laboriously prepared and mounted for his microscope. He maintained an active interest in this line of work all his life.

In the fall of 1884, Drs. Dickinson and Freeman diagnosed a case of acute appendicitis in a boy and advised immediate removal. This was such a radical and unusual suggestion that the family refused permission and resorted to all the time-tried remedies. Even the skin of a freshly killed cat was applied for some time to the abdomen with no startling results. Finally, after hesitating a number of days, operation was permitted. An abscess was drained and the appendix removed, after which an uneventful recovery ensued. This patient is still alive and healthy, a resident of Rapid City, South Dakota. As the first American operations of this type had been done in New York only five years previously, this operation must have been one of the earliest removals in the midwest.

Dr. Freeman became a member of the Dakota Medical Society in June, 1888. At this meeting one of the doctors in attendance presented an unreduced dislocation of the femur of six weeks duration. A committee of three, of which Dr. Freeman was a member, reduced this dislocation before the Society.

In 1889, Dr. Freeman read a paper before the territorial medical society on skull fractures and scalp wounds. In this paper he advocated shaving the skin, washing the wound with both soap and water and carbolic acid solution and finally

sewing the wound with horse hair that had been boiled. Such a refined technic proposed by a young doctor roused the ire of an older colleague at the meeting who facetiously remarked that all one had to do to secure approximation of a scalp wound was to tie the hairs of the head together and let Nature do the rest.

At the meeting of the State Medical Society at Sioux Falls, in 1890, Dr. Freeman was elected president and served one year, although unable to preside at the next meeting at Salem.

The Black Hills Medical Society owes its existence to Dr. Freeman, who was its mainstay for many years and its president on several occasions.

When the State Board of Medical Examiners was first created, in 1903, he became one of the members, serving in this capacity a number of years. He was again appointed to the State Board of Health, in 1920, being president of that body at the time of his death.

He served as health officer of Lead from 1910 to 1918 and was a member and president of the School Board of Lead for a great many years.

When the World War started he was placed in charge of the Lawrence County draft board and supervised medical examination of all soldiers throughout the entire war.

In 1918 he retired from active practice, turning over his work to men whom he had trained. As the call for active doctors became more urgent, he again assumed his old position, but finally retired the next spring.

It was during this return that he suffered an attack of cerebral thrombosis, which undermined his health and finally caused his death.

Dr. Freeman was one of the pioneer industrial surgeons of the country, having been associated with the Homestake Mining Company from 1883 until 1918, the last fourteen years as chief surgeon.

He was an honorable man, a shining light in the profession, a stimulus to the younger men whom he trained, and an example to all with whom he came in contact.

After an intimate professional association of twenty-four years, I am convinced no more befitting tribute could be paid him than those words of that old biblical saint who, at the close of his life wrote:

"I have fought the good fight, I have kept the faith, I have lived and am content."

# THE JOURNAL-LANCET

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## PERIODIC HEALTH EXAMINATIONS AND THE PRACTITIONER

Efficiency is the wage-earner's stock-in-trade. It is probably 70 per cent physical fitness and 30 per cent technical training. Health publicity and an increasing frankness of the medical profession to its public have produced in the mind of the wage-earner an attitude for ready acceptance of any reasonable plan that will safeguard his earning power. He is perfectly familiar with the fact that heart disease, high blood pressure, cancer, tuberculosis, and focal infections are "ace-high" and of insidious onset. He is quite ready to concede that a competently performed clinical examination is of value in detecting early degenerations in lung, heart, or kidney.

Modern conditions have drifted us far from Drumtochty, where the grandfather who "slippit awa" under ninety was something of a family disgrace. That the medical practitioner must have available the clinical efficiency to meet the situation, is only an economic phase.

The carefully kept card index and case record is found more frequently in the modern office desk than twenty years ago. It is but a forward step to add a compartment file for those of our clientele who would appreciate more modernism in medical methods. That the family doctor may become the trusted medical biographer, as well as clinician, is a trend in public service that seems

to be indicated by the times in which we are living. Upon reflection it is astonishing how frequently we stumble upon granular casts, abnormal blood pressure, or doubtful tumors in the course of the ordinary life insurance examination. Thoroughness of method and completeness of record should be placed squarely up to the physician himself, and the industriously cultivated field may in time yield well-earned dividends.

J. G. L.

## THE EXAMINATION OF PATIENTS

The writer hesitates even to introduce a subject of this kind because it means so much to the medical profession and, very directly, so much to the patient. We as a whole are inclined to be a little negligent about our duties to the patient. The result is we get into bad habits of superficially examining people, not considering their ailments from the right angle, not going over them thoroughly enough in making a real examination. Then, too, we do not consider them from a personal point of view and take the right side of the personal interest in the patient and the doctor. Many cases drift from doctor to doctor for this reason alone. Superficial, hurried, incomplete examinations, indifference, crabbiness, and irritability on the part of the doctor, and, although the patient may drift into perfectly competent hands, the attitude of the man who is employed sometimes changes the entire aspect of the patient either toward the doctor, or her disorder, or line of treatment suggested.

Of course many busy men are unavoidably hurried in their work, and the patient is the one who suffers. Perhaps that is one reason why patients go from surgeon to surgeon, not satisfied with one man's opinion, but trying to find the right person the right time and to be convinced that the doctor is in earnest, that the patient is the all-important individual, and hence it is very necessary to employ one's experience to cultivate a manner which implies at least knowledge and a personal feeling about the patient, which means a personal interest.

Many cases have been shunted away either from one clinic to another or from one doctor to another that should be kept in one doctor's care. One must presume that there are times that sacrifice of time must be considered for the benefit of the patient, and not necessarily for the benefit of the doctor. We never quite know how patients are going to accept us, whether as friends or enemies; and yet the man who at-



tempts to impose himself upon a patient by his manner or his personal equation may not be the man who is competent to treat the patient.

These suggestions are prompted by recent information of a few cases that have been mentally man-handled by doctors and in which the relationship of doctor and patient was broken off by some trivial circumstance, and the poor patient wanders from one hospital to another until finally he finds a valley of salvation in a man whose personal interest is sufficient to hold a patient in a manner which is both professional and interesting, and in which the recovery is due much to the attitude of both patient and physician.

Again it is necessary to emphasize the urgency of more thorough examinations. The man who is properly equipped can make a very careful examination by economizing his time and the time of the patient, and better still by economizing his methods of examination. When he does that he has everything to be thankful for. So has the patient. But let him once form the habit of indifference, and all is lost. It is a delicate situation both for the doctor and the patient, and we all have our methods and manners, some of which are good and some of which are bad. The patient, poor soul, is the one that suffers. History-taking can be accomplished within reasonable limits of time if it is begun in earnestness and by careful and human cross-examination, so that one may safely start with the presumption that the history has already indicated a line of examination and probably a line of treatment.

#### HAVE YOU READ "LIGHT FINGERS"?

This book is written by a Minnesota boy, and part of his life was spent in Moorhead, Minnesota. His name is Frank Lord, of New York.

"Light Fingers" graduated in law, and became an assistant district attorney in New York and later deputy police commissioner in charge of the detective bureau of the city. There, naturally, he was thrown in with criminals of all types and classes, and this story is written in a delicately satirical way which embraces his conception of his boyhood and youth, and he was a shop-lifter's son. His mother was a very beautiful woman, but her occupation in life was shop-lifting, and one night she was overtaken as she departed from a store with furs and other valuables in her possession, but the female police officer insisted she go back to the store and return the goods and make her explanation to the chief. The police evidently were sorry for her and suggested to her that she must humble herself utter-

ly; that she must do anything she possibly could to keep out of prison. The result was she was left with the man in the office on the second floor after the store closed, and after one or two hours she departed for her home thoroughly compromised, and in the usual time a son was born to her and becomes the subject of Frank Lord's story "Light Fingers."

The story details the mother's loving attachment and care of her child and of his youth. He adored her, and she adored him, but she was a thief, and, knowing that some day the truth would come out, she made the boy promise that whatever happened to her or whatever overtook her he would always be his mother's boy and think well of her and be true to her memory. The inevitable happened. She was betrayed by another thief and addict and was eventually sent to the Tombs and later to Auburn Prison, committed for five years. She willingly gave up her boy who was eventually adopted, first, by some people who kept him only a day or two because they were going abroad, and next by a farmer and his wife who lived in Northern Minnesota. There he grew up to young manhood. His environment was good; his foster parents were fortunate in securing him, and they did everything within their power for him. They educated him, saw him through the normal school, of which the author's father was president, and then he was sent for to go to New York and he went, ostensibly for business reasons, but in reality because his mother might be pardoned from Auburn Prison.

However, the moment he strikes the city he becomes entangled with others of the criminal type and is ultimately betrayed by a woman who had recently served her term in Auburn Prison, and, in his endeavor to do the right thing and to keep out of trouble's way, he met the usual fate of those who are surrounded by criminals. Arrested on a technicality, sent to the Tombs and to Blackwell's Island for a short time, he gets away and then makes his home with another old and hardened criminal who instructs him in the matter of securing his mother's release, and then he gets him into further trouble, desperate trouble, in spite of his endeavor to free himself from an entanglement. He then commits one of the boldest acts of his life. He, in turn, to save his mother and to get her pardoned, attacks the man who is responsible for his own life and for the outrage upon the mother. But in getting into this—and he carries it out with the greatest skill of a trained criminal—he is ultimately caught, convicted, and sent to Sing Sing. And

yet he is practically innocent of everything that is criminal. That is, his love and regard for his mother prompt him to do everything and take the most desperate chances that a man could in order to save his mother. Of course, ultimately both mother and son are pardoned. The mother dies soon after her release, and the boy comes back to Minnesota and becomes a prominent and respected citizen.

Frank Lord eventually learns much about heredity and environment and how difficult it is to prove one's innocence, to overcome a weakness, to develop strength in time of need, and to create a being who becomes an important study in psychology.

As one reads on the book becomes tremendously intense and leads one through many a thrilling climax to a timely end. Doctors would profit by this book and would learn how criminals develop in spite of their handicaps, how they may return to civilization and may eventually develop into strong characters.

#### DR. WILLIAM R. MURRAY—AN APPRECIATION

The editor desires to make a more extended notice of the death of Dr. William R. Murray, of Minneapolis, the announcement of whose death reached us just as our issue of January 1 was going to press, and only a brief notice of Dr. Murray's death could be made.

Dr. Murray died on Wednesday, December 27, in Minneapolis, from an infection which he contracted two weeks before while operating on a boy with an abscess in the middle ear. He accidentally pricked the thumb of his left hand, and, although he resorted at once to such measures as are usually carried out, the virus was too much, and the following day his arm and hand were swollen and in the active stage of a violent infection. Everything possible was done for him, even to the gridironing of his arm and forearm and finally the amputation of his left arm. But all was of no avail.

Dr. Murray was born in Marquette, Michigan, and he received his Ph.D. degree from the University of Michigan, and in 1897 he was graduated from the Rush Medical College. He took his interne work at the Illinois Eye, Ear, Nose and Throat Hospital. He did postgraduate work in Philadelphia in 1899, and in Vienna and London in 1909 and 1914. Soon after coming to Minneapolis he was associated with the late Dr. Frank Todd and after Todd's death he continued his specialty and later joined the Nicollet Clinic, and was one of its department heads.

He leaves a wife, two sons, Gordon and Julian, and a daughter, Mary. He was buried at Lake-wood Cemetery in Minneapolis.

Dr. Murray was one of a number of great men in Minneapolis, and he advanced so rapidly in his profession that he soon became identified with the University Medical School and for years before his death was the head of the Department of Ophthalmology, Otolaryngology, and Rhinology, and held a similar position in the Nicollet Clinic. He was an active member of the American Academy of Ophthalmology and Otolaryngology, a Fellow of the American College of Surgeons, a member of the Minnesota Pathological Society, the Hennepin County Medical Society, the State Medical Association, the Academy of Medicine, and the American Medical Association. He was a 32d degree Mason.

The editor had the personal privilege of enjoying a very close relationship with Dr. Murray in having adjoining offices for several years and grew to know him extremely well, and he found him not only a companionable man but a man of wide information, and when he was known to his associates he was an enjoyable companion. Naturally he was reserved in his manner; he was not an over-talkative man, but when he talked he had something to say. He was known by most of the men of Minnesota and he often attended meetings in South Dakota and North Dakota where he gave evidence of his knowledge of his subject. No one can quite take Dr. Murray's place, but his work will go on as usual under his very able assistant at the Nicollet Clinic.

The last medical paper written by Dr. Murray was presented before the South Dakota State Medical Association, and was published in *THE JOURNAL-LANCET* of November 15, 1926. It was on "Acute Diseases of the Eye."

We are reminded here to inject a remark which has been used before as to the knowledge the people have about the dangerous occupation of a surgeon or physician and perhaps how little his exposures are noticed by lay people and others who are not in a position to know. Here was a man cut down in the active stages of his life by what seemed to be a minor incident, but what proved to be rapidly fatal in spite of the fight Dr. Murray put up and his acquiescence in whatever was necessary for him. But he gave up his life uncomplainingly, knowing full well at the time his infection began what the outcome would be, and yet he went down heroically, submitting to that which followed his hazardous calling. He probably knew at the time he would leave behind, or at least we knew he would leave



behind, a large number of faithful followers, faithful adherents, men and women who believed in him, his courage, his generosity and in his manlike qualifications. It is very difficult to express one's feelings about the departure of such a man and he will be with us long in memory and will always be appreciated.

The funeral occurred at his residence, 1775 Fremont Avenue South, and was participated in by a large number of his associates. Among the active pallbearers at the final rites were Dr. A. C. Strachauer, Dr. James A. Johnson, Dr. Charles A. Reed, Dr. Gilbert J. Thomas, Dr. J. P. Schneider, and Dr. Angus W. Morrison.

## MISCELLANY

### PHYSICAL THERAPY

The subject of physiotherapy has been taken up by the Council on Physical Therapy of the American Medical Association and the *Journal of the A. M. A.* prints the entire number of rules which are supposed to govern this part of the medical practice. As has been stated before, in our editorial columns, the non-medical man who is attempting to heal disease should confine himself strictly to his line of work, or he should expand his knowledge so as to enter medicine through the front door rather than through the back door. And if these official rules of the Council are to be carried out it certainly will put the specialist in physical therapy on a much firmer basis.

The rules are taken from the *Journal of American Medical Association* for December 11, 1926, page 1,999, and are as follows:

#### OFFICIAL RULES OF THE COUNCIL ON PHYSICAL THERAPY

*Object of Rules.*—The following rules have been adopted by the Council on Physical Therapy of the American Medical Association primarily with the object of protecting the medical profession and the public against fraud, undesirable secrecy and objectionable advertising in connection with apparatus and methods for physical therapy.

Devices and methods that have been found acceptable as conforming to the rules of the Council will be described in an Accepted List.

The term "device for physical therapy," as defined by the Council, shall mean any device by means of which apparatus is employed for the diagnosis or treatment of disease or the promotion of health.

*RULE 1. Nature of Apparatus.*—A device will not be acceptable for inclusion in the list, or retained therein, unless a full description of its construction

and of its modus operandi is furnished to the Council for publication. Working plans and specifica-

tions with photographs and blue prints shall be supplied when requested.

*RULE 2. Efficacy.*—A device or method will not be acceptable or retained unless sufficient information and satisfactory evidence of its operation and effectiveness are made available to the Council.

*RULE 3. Advertising.*—A device or method that is advertised for diagnostic purposes or as a therapeutic agent will not be accepted or retained unless the advertising material and other descriptive matter prepared for distribution to physicians or to institutions or to the public have been submitted to and accepted by the Council. The therapeutic indications and the action of the device, or method, and the dosage may be indicated, provided such statements do not suggest self-treatment.

*RULE 4. False Claims.*—A device will not be acceptable or retained concerning which the manufacturer or his agents make false or misleading statements as to the nature of its construction or action.

*RULE 5. Unwarranted Therapeutic Claims.*—A device will not be acceptable or retained concerning which the manufacturer or his agents make unwarranted, exaggerated or misleading statements as to its therapeutic value.

*RULE 6. Dangers.*—The directions and the descriptive circulars accompanying a device must state plainly the limits of safety and the possibilities of danger attending its use.

*RULE 7. Standardization.*—A device will not be accepted or retained unless it has satisfactorily passed tests under conditions acceptable to the Council.

*RULE 8. Objectionable Names.*—Proprietary names for physical therapeutic apparatus will be recognized only when the Council shall deem the use of such exclusive names to be in the interest of public welfare. Names that are misleading or suggest diseases, pathologic conditions or therapeutic indications will not be recognized. The continued use of well established or existing trade names must depend on the addition of a descriptive name on the label as the main title, with the trade name in parenthesis below the main title. After March 1, 1927, no new trade names for physiotherapeutic methods, systems of physical education, or apparatus for therapeutic or diagnostic use will be recognized except when they involve the application of a new physical agent, or a new essential application of a known physical agent, and otherwise comply with the rules of the Council.

*RULE 9. Patented Apparatus and Protected Names.*—If the device is patented—either the apparatus or its mode of application, or both—the number of such patent or patents must be furnished to the Council. Furthermore, if the name of a device is registered, or the label copyrighted, the registration (trade-mark) number and copy of the protected label shall be furnished the Council. In case of registration in foreign countries the name under which the device is registered should be supplied.

*RULE 10. Useless Devices.*—A device will not be acceptable or retained which, because of its unscientific construction, is useless or inimical to the best interests of the public.

*RULE 11. Policies of Firms Detrimental to Rational Therapeutics.*—The Council will not retain, if already accepted, the appliances of a firm if, in the opinion of the Council, the policies of such firm are clearly detrimental to the welfare of the public.

## NEWS ITEMS

Dr. B. J. Martin, of Bemidji, has moved to Miami, Florida.

Dr. G. Bartholomew, of Timber Lake, S. D., has moved to Newport, Neb.

Dr. George E. Thompson has moved from Cathay, N. D., to Gilman, Wis.

Dr. D. J. Halliday, who formerly practiced at Grenora, N. D., has located at Kenmare, N. D.

Fargo is now assured of a \$200,000 U. S. Government Hospital in that city for the U. S. veterans.

Dr. N. H. Scheldrup, of Minneapolis, has been decorated by the king of Norway for distinguished World War services.

Dr. Imre Dobos, of Butte, Mont., has been appointed chief of the Pathological Department of the Colorado University School of Medicine.

It has been reported that Dr. A. G. Noble, of Howard, S. D., had gone to Oregon. This is a mistake, although Dr. Noble has been considering the move.

It has been announced that Abbott Hospital of Minneapolis will be enlarged by the addition of a wing to the present structure at a cost of several hundred thousand dollars.

The Aberdeen (S. D.) District Medical Association will meet in Aberdeen on January 25. Papers will be presented by Dr. F. W. Schlutz and Dr. J. G. Cross, of Minneapolis.

Dr. Smiley Blanton, who has been at the head of the Minneapolis Child Clinic for two years, has been called to Vassar College, where he will occupy a recently endowed chair on child study.

Dr. H. B. Fralic, formerly superintendent of the Veterans Bureau Hospital (No. 63) of St. Paul, has been appointed superintendent of the Fort Snelling Hospital, which will open March 30.

North Dakota has two physicians in her legislature. Dr. W. H. Porter, of Calvin, is a member of the Senate; and Dr. P. O. C. Johnson, of Waterford, is a member of the house of representatives.

Dr. W. F. Sihler, of Devils Lake, N. D., was unanimously re-elected president of the Town and Country Club of that city last month. Dr. Sihler has been president of the Club since its formation.

The Eastern Montana Medical Association held a quarterly meeting at Glendive, on December 18. Dr. A. W. Ide, of St. Paul, presented a paper at the meeting. The attendance was restricted by bad weather.

The following medical men are members of the South Dakota legislature: Dr. W. J. Maytum, Alexandria, senator; and Drs. J. C. Ash, Garden City, A. E. Bostrom, DeSmet, and A. W. Pearson, Peever, representatives.

Dr. W. L. Patterson, who has been Assistant Superintendent of the State Hospital, at Fergus Falls, for twelve years, has been appointed Superintendent to succeed Supt. George O. Welch, who recently resigned on account of ill health.

Dr. G. A. Newman, of Stillwater, died last month at the age of 64. Dr. Newman was a graduate of the Medical School of the U. of M., class of '95, and had been, at the time of his death, physician of the State Prison at Stillwater for eighteen years.

Dr. R. W. Huffman died last month at Petaluma, Calif., at the age of 53. Dr. Huffman was a graduate of Queen's U., Department of Medicine, of Kingston, Ontario, class of '99. He practiced in Elgin (Minn.) for three years, and had been in California three years, where he went for his health.

Dr. L. A. Schipfer, eye, ear, nose, and throat specialist of Bismarck, N. D., left December 1, 1926 for Vienna, where he will do post-graduate work for a year in his specialty. He will also take up lung mapping and the bronchoscope. Dr. Schipfer will return to Bismarck, N. D., at the end of the year.

Dr. Rudolph Schiffman, a Minnesota pioneer physician and surgeon who lived in St. Paul for thirty-five years, died in California last month, at the age of 82. He was a Civil War surgeon. Dr. Schiffman accumulated a large fortune from the sale of a remedy for asthma. Of late years he has lived in California.

The Rice County Medical Society held its annual meeting at Faribault, on December 22, and elected the following officers: President, Dr. C. A. Traeger, Faribault; first vice-president, Dr. F. R. Huxley, Faribault; second vice-president, Dr. C. J. Lexa, Lonsdale; secretary-treasurer, Dr. C. J. Plonske, Faribault; delegate, Dr. F. S. Warren, Faribault.

The annual meeting of the Red River Valley Medical Association was held in Crookston last month when the following officers were elected:



President, Dr. G. A. Moseley, Crookston; vice-president, Dr. H. W. Froelich, Thief River Falls; secretary and treasurer, Dr. M. J. Oppengaard, Crookston; delegate, Dr. J. F. Norman. A short scientific program followed the election.

Dr. G. M. A. Fortier, of Little Falls, died on December 28, 1926, at the age of 69. Dr. Fortier was a graduate of Leval U., Quebec, class of '81. He began practice in Little Falls the same year and continued in active practice until he broke down in health a couple of years ago. Dr. Fortier was among the early pioneers of Minnesota and was a highly respected man and physician. He is said to have had the largest practice in Morrison County.

The North Dakota legislature of 1927 will be asked to provide a new Infirmary addition at the North Dakota Tuberculosis Sanatorium, at an approximate cost of \$125,000.00. During the coming season the Children's Pavilion will be completed. The report of the State Budget Committee, recently issued, approved both of these items. The Sanatorium at San Haven has been much crowded for room during the past two years and at the present time has a waiting list of about fifty patients.

Arthur T. Rowe, D.D.S., of Minneapolis, has been appointed to the professorship of prosthesis and crown and bridge work in the Dental College of Columbia University, and will begin work the first of February. Dr. Rowe is a graduate of the Dental College of the U. of M., and after practicing ten years in Larimore, N. D., he came to Minneapolis where he has been for ten years. Most of the time in Minneapolis he has worked in the Dental College of the U. of M. because the College did not have sufficient funds to pay him a stated salary. He goes to Columbia at a salary of \$8,000, \$9,000, and \$10,000 for the next three years and the privilege of having private patients. Dr. Arthur T. Rowe is a son of Dr. H. J. Rowe, who was secretary of the North Dakota State Medical Association and is now living, retired, in Minneapolis.

#### Sioux Valley Medical Association

The winter meeting of the Sioux Valley Medical Association will be held at the Martin Hotel, Sioux City, Iowa, on January 18 and 19 inst.

In arranging a balanced program we endeavored to secure men of high standing in their respective specialties, which assures us a meeting of particular attraction to all our members.

We have secured Dr. B. Corbus, of Chicago, who has pioneered in electro coagulation, especially as related to pelvic pathology. His subject will be

a revelation to the members attending the meeting.

Dr. L. Snorf, of Chicago, who received his training under Dr. Sippe, will present a discourse on the diagnosis and treatment of chronic intestinal diseases.

Dr. E. S. Judd, of Rochester, needs no introduction, and his subject will cover surgery of the gall-bladder and bile-ducts.

Dr. F. E. Clough, of Lead, S. D., will cover the fracture field, and he likewise needs no remarks as his reputation is indisputable.

Dr. M. M. Meyers, of Des Moines, is one of the leading cardiologists of the Middle West, and as a teacher he stands preeminent.

Dr. F. C. Rodda, of Minneapolis, is a pediatricist of note and will tell us about the recent developments and uses of vaccines and sera in the treatment and prevention of acute children's diseases.

Dr. R. S. Westaby, of Madison, S. D., will enlighten us on the medicolegal phase of post-mortem examinations.

Clinics will be held during the morning periods by the speakers of the afternoon sessions. A banquet will be held on the evening of January 18.

Don't forget that the membership last year voted to raise the dues of our society in order to pay the expenses of the invited doctors who participate in the programs. Admittance to the sessions will be with membership cards only. This is necessary because many members (so called) have been attending our meetings without ever paying one dime toward defraying the expenses of our meetings. The committee finds it necessary, therefore, to resort to this expedient.

We believe our program an excellent one and urge you to make arrangements now to attend.

—R. F. BELLAIRE, M.D.  
Secretary.

#### Hennepin County (Minneapolis) Medical Society

The following officers and committees were elected for 1927 at the annual meeting, January 3d, 1927:

President.....	Dr. Stanley R. Maxeiner
First vice-president.....	Dr. A. E. Hedback
Second vice-president.....	Dr. C. O. Maland
Secretary-treasurer.....	Dr. Erling Hansen
Librarian.....	Dr. T. A. Peppard (re-elected)
Executive Committee.....	Dr. Fred A. Erb
(for 3 years).....	Dr. A. S. Hamilton
Board of Censors.....	Dr. J. M. Hayes
(for 3 years).....	Dr. Douglas Wood
Board of Trustees.....	Dr. A. W. Abbott (re-elected)
(for 3 years).....	Dr. W. A. Jones (re-elected)
Delegates to State Convention, 1927:	

Regular	Alternates
Dr. W. A. Fansler	Dr. Frank Hacking
Dr. E. K. Green	Dr. J. P. Hiebert
Dr. W. A. Jones	Dr. C. C. Kennedy
Dr. Ralph Knight	Dr. H. M. Lee
Dr. E. A. Loomis	Dr. J. A. Myers

#### Sixth District Medical Society of North Dakota

The last meeting of the Sixth District Medical Society of North Dakota for 1926 was held at the Grand Pacific Hotel, Bismarck, in the Lions Den, on December 18.

Dinner was served at 7:30 p. m., to thirty-two persons, following which the scientific program was immediately begun with a very interesting and instructive paper by Dr. Frank E. Burch, of St. Paul,

on "The Fundus in Relation to Internal Medicine." The paper will be published later in the JOURNAL-LANCET.

Dr. Archie D. McCannel not having arrived the meeting was opened for business.

Minutes of previous meeting were read and approved.

The report of the Insurance Committee was given by Dr. Roan, who read a letter from the Ft. Wayne Company, saying that they would continue doing business in North Dakota; also a letter from the Fidelity Company, giving rates. The report of the committee was accepted, the committee discharged, and the matter dropped, each member taking the policy he desired.

A letter was read by Dr. Stackhouse regarding a radio as a Christmas present for Dr. Smyth which was being promoted by a Miss Jones, under the auspices of the Presbyterian church.

A motion by Dr. Quain to appoint a committee of the Society radio-bugs to collect the necessary money and to confer with Miss Jones was seconded by Dr. Nickerson, and carried.

Committee: Drs. Stackhouse, Graber and Quain. Motion by Dr. Arnson that the Society pay the difference necessary to buy the radio for Dr. Smyth was seconded by Dr. Quain and passed.

Dr. Archie McCannel, of Minot, arrived and the scientific program was continued.

The program was opened by informal discussion of the bronchoscope and other methods of treatment in eye, nose, and throat work.

The Doctor believes that the value of the bronchoscope is greatly overestimated, though it is very valuable in the removal of foreign bodies and in dilatation of the larynx, which procedure gives complete relief, temporarily, in senile asthma.

The use of adrenalin in glaucoma and mercuriochrome-220 in eye infection was discussed.

A list of those having lost their membership due to non-attendance was read.

#### ELECTION OF OFFICERS FOR 1927

Dr. F. F. Griebenow and Dr. M. W. Roan were nominated. Dr. Roan withdrew his name. Nominations closed, and the secretary was instructed to cast a unanimous ballot for Dr. Griebenow, of Bismarck, N. D.

Dr. M. W. Roan was nominated for vice-president, nominations were closed, and the secretary was instructed to cast a unanimous ballot for Dr. Roan, of Bismarck.

Dr. R. W. Henderson, of Bismarck, re-elected secretary-treasurer for one year.

Dr. J. O. Arnson, of Bismarck, was elected to succeed Dr. B. S. Nickerson, of Mandan, as third censor.

Dr. C. E. Stackhouse and Dr. H. O. Brandes were re-elected as delegates for the succeeding year.

—R. W. HENDERSON, M.D.  
Secretary-Treasurer

#### Laboratory Technician Wants Whole or Half-time Work

A graduate of the Ancker Hospital (St. Paul) laboratory with four years experience desires work in or outside of the Twin Cities. Can do all kinds of laboratory work, and can make herself useful in hospital, clinic, or office. Best of references furnished. Address 302, care of this office.

#### Attractive Office for Rent in Minneapolis

Call or write the office (404 La Salle Building, Minneapolis) for information.

#### Minneapolis Office for Rent

Office space in Donaldson Building for rent. Rate very reasonable. Call Ge 2564 or address 251, care of this office.

#### Location Wanted by Physician

A recent graduate desires a desirable location in the Northwest. Graduate of the Medical School of the U. of M. Address 308, care of this office.

#### Physician Wanted

To locate in a town of 600 with large mixed farming community in Northeast South Dakota. No competition. Address 309, care of this office.

#### Position Wanted in Physician's Office

By a young woman who has had one year's training in a hospital and some office work. References as to character and ability. Address 310, care of this office.

#### Laboratory Technician Wants Work

Has had three years experience in large hospital. Can do both  $x$ -ray and general laboratory work. High-grade references. Address 305, care of this office.

#### Laboratory Technician Wants Work

Is graduate of city hospital course in  $x$ -ray and general laboratory work. Can keep books, do typing, and has worked seven years in railroad office. Address 304, care of this office.

#### X-Ray Equipment Wanted

Would buy used  $x$ -ray and fluoroscopic equipment. Must be of standard make. Will be examined by electrical engineer. State price in first letter with detailed description. Address 301, care of this office.

#### Technician and Registered Nurse Wants Light Work

A woman, aged 34, who can take care of the laboratory work in a small hospital or physician's office and assist with the nursing will accept a small salary in a desirable position. Address 306, care of this office.

#### Laboratory Technician Wants Work

Experienced laboratory technician desires position in Twin Cities or vicinity. Capable of doing blood counts, urinalysis, Wassermann, tissue staining, blood chemistry, and bacteriology. Also  $x$ -ray. Address 300, care of this office.

#### Office Furniture and Lease for Sale

In excellent location at a transfer point in Minneapolis, over a drug-store. I am compelled by sickness to leave the city. Office rent, \$35. Will sell furniture, etc., for \$350. New man will pick up some practice at once. Address 303, care of this office.

#### High-grade Technician Wants Position

Can take care of the laboratory and  $x$ -ray work in a clinic or small hospital or take charge of either department in a large hospital. Has had nearly two years country and city experience. Address 307, care of this office.



# THE JOURNAL-*LANCET*

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## CLINIC ON INTERNAL MEDICINE\*

BY FREDERICK TICE, M.D.

Professor of Medicine, Medical Department, University of Illinois

CHICAGO, ILLINOIS

In the evolution of medicine there are constant changes that are quite analogous to the changes that are going on in all other branches. There was a time when it was considered sufficient to obtain only a history from a patient to make a diagnosis. Back in the days of Hippocrates that was all that occurred. After the establishment of anatomy by Vesalius and, later, physiology by Harvey, more or less of a standard was established. This work was followed by anatomical studies, particularly by Morgagni. Following his time came the clinical methods, the first by Auenbrugger in percussion, and later by Laennec in auscultation, and a definite clinical standard was established. With the advent of bacteriology, and more recently with laboratory methods, there has been more of a tendency to depend upon these methods for the recognition of disease. There was a time when a large clinic, with two, three or four hundred in attendance was a means of determining the ability or popularity of that particular clinician. Those days have long since passed. The small-group clinics have taken their place, and at present even this is being replaced by individual teaching—bedside teaching. The student of to-day is assigned to a patient, and he must obtain the history, must make a careful examination and record it. He must make all of the laboratory tests so far as is within his power, and it is only by this individual application that real medicine can be taught.

To appear before you and attempt to give a medical clinic seems rather, in the light of atavism, an old method of teaching. There is one difference, however. The clinical material supplied here is already diagnosed, so we are not troubled with the matter of diagnosis. It remains only to make some remarks upon the particular things that may be presented.

A word or two might perhaps be said at this time regarding laboratories and laboratory methods. In many quarters there has been a tendency on the part of clinicians to depend too much upon the laboratory. A patient comes under observation (this is an experience we encounter particularly in our hospitals), and the interne is called as soon as the patient arrives. For one reason or another that patient may be sent at once to the x-ray or some other department, as the symptoms may indicate, and they will rather underestimate, or at least neglect, the matter of the history and physical examination. In the days of Hippocrates the clinical history was the basis of the diagnosis. Later the physical examination came into prominence, and later still the laboratory methods. All of these combined should make up the basis of the examination and the diagnosis. They are all important, and no one of them should be supplanted by the other.

We have a few cases to present, and Dr. Wilson will read the history of the first patient:

CASE 1.—DR. WILSON (presenting patient): This man is a salesman, aged thirty-seven. Two maternal aunts and one sister have died of tuberculosis; an-

\*Informal clinic presented before the South Dakota State Medical Association, Aberdeen, May, 20, 1926.

other sister had it, but is now cured.

In his personal history we find that he had the usual childhood diseases. In 1913 he had a chest injury, which was followed by hemorrhages, and he lost thirty-five pounds in weight at that time. Tuberculosis was diagnosed, and he was incapacitated for one year. In April of this year he had the "flu," followed by pneumonia and pleurisy. He was tapped twice, the operations being one week apart. On the first occasion fifty ounces of clear, straw-colored fluid were removed, and twenty-two ounces were withdrawn the second time, the nature of the fluid being the same.

His normal weight is 155, and he now weighs 140. His pulse is 84, and temperature 98.6°F. His right chest is flattened, and there are evidences of fluid being present.

**DR. TICE:** General inspection of the patient reveals fairly well maintained weight. Inspection of the chest, to which the history directs our attention, does not reveal any very striking abnormalities. With the ordinary quiet breathing the expansion is about equal. There may be a little retraction on the right side in the intraclavicular area, with a little more fullness on the left. With forced breathing there is evidently more elevation of the left shoulder, more expansion. While it is fairly good on the right there is better expansion on the left. On percussion there is better resonance on the left, both above the clavicle and below. There is slight impairment on the right, which is brought out a little better above the clavicle. There is no excursion on the right and good excursion on the left. The left apex is movable, but there is no change over the right. There is very slight change in the liver dullness upon forced respiration. On the left there is good excursion, and a good excursion over the heart.

Anteriorly there is impairment of resonance over the entire right side with fixation, no excursion above or below. On the left there is good apical, good basal, and good cardiac excursion. I think you can see the difference in the expansion better posteriorly. The right side is definitely retracted. In the proper light we were able to obtain a very good Litten diaphragm phenomenon on the left. With ordinary, quiet breathing, there is definitely impaired expansion on the right, which is better on the left. With forced breathing there is poor expansion and inflation on the right while on the left there is good expansion. On the right there is dullness, amounting practically to flatness, from the lower angle of the scapula downward. Tactile fremitus can be detected on the right, but is much better on the left.

I will have to tell you the findings on auscultation. Over the entire left side breath sounds are present, unassociated with any râles or

roughness. On the right the breath sounds are relatively diminished, especially over the region of the right lower lobe, with slight increase over the apex of the lobe. The sounds are vesicular, and dry râles are present over the right apex. The heart is not enlarged, and there are no murmurs or other evidence of cardiac involvement. The liver is not enlarged. In the recumbent position there is no definite evidence of displacement of the liver, and there is no displacement of the heart. Posteriorly there is no evidence of lateral displacement. There is no Grocco's sign or paravertebral dullness.

We have clinically the physical evidences of an obliterated pleura, an adhesive pleuritis involving the entire right side, with a history of recent aspiration, with perhaps a limited amount of fluid remaining in the lower portion of the chest. There is evidence, particularly over the apex of the right lobe, of a pulmonary involvement.

The question is, first, as to the presence or absence of pleurisy with effusion. We know from the punctures that fluid was present and there may be some fluid still remaining, but from the clinical standpoint there is not much fluid exudate for the reason that there is no displacement of the heart or liver, and Grocco's sign is not present.

In the diagnosis of fluid in the chest the most definite means of determination is the diagnostic puncture. That is first; secondly, movable dullness, shifting of the dullness upon changing the position of the patient. That does not occur in this case, and it occurs in not to exceed 15 to 16 per cent of the cases. Fluid may be present, and the dullness may not shift. The third sign is lack of tactile fremitus, one of the relatively important physical signs but not pathognomonic. The displacement signs are comparatively important, and if present one may be reasonably sure that there is fluid. In neoplasm displacement does not occur unless the growth is enormous. Fourth, is the decrease in breath sounds or in spoken sounds. This, however, is not absolutely definite, but is supposed to be absent with fluid in the chest. In checking up the cases approximately 40 per cent of the cases of pleural effusion present bronchial breathing, or tubulous breathing, due to the fact that water is a good conductor, and if the lung is compressed, particularly if there is a limited associated atelectasis or consolidation, the sounds are definitely transmitted from the trachea to the chest wall in the form of bronchial or tubular breathing.



Other means of diagnosis, the fluoroscope and radiogram, are of service and assistance, but are not to be depended upon without reservation. If a patient is referred to the *x*-ray department with a diagnosis of fluid in the chest, upon examination he is often returned with a diagnosis of no fluid when a puncture will reveal fluid. Or, *vice versa*, a patient may be sent with a diagnosis of consolidation and be returned with a diagnosis of empyema, or fluid in the chest.

In all doubtful cases we should not hesitate to employ a diagnostic puncture. Rarely, if ever, are there contra-indications. At times we may not be able to obtain permission from the patient or his family, but, this granted, do not fail to resort to puncture. It is the most definite and absolute means of diagnosis, not only for discovering the presence or absence of fluid, but because it also enables us to determine etiologically the type of infection.

This patient came under observation some ten years ago, at which time a diagnosis of tuberculosis was made on a positive sputum. He went on until recently with apparently a satisfactory arrest. He developed the "flu," following which time he developed a pleurisy with effusion. This is of interest. As you know, the "flu" destroys the antibodies of tuberculosis just the same as measles or whooping cough in childhood produces a destruction of the antibodies of tuberculosis. For this reason after measles and whooping cough tuberculosis is comparatively frequent in children. In adults the "flu" constitutes a third disease in which a similar change in immunity takes place. That is what occurred here. Ten years ago there was an active, open pulmonary tuberculosis. Subsequently, following the "flu" there were temporary destruction of the antibodies and development of pleurisy with effusion. Now the sputum is free, he is in good condition physically and apparently is gaining a sufficient amount of resistance so that the outlook is promising.

**CASE 2.—*Syphilis of the lung.*** DR. WILSON: This man is a laborer, aged fifty-two. He states that he had the usual diseases of childhood. His normal weight is 150 pounds, but about four years ago he began to lose strength and weight. His appetite became poor, and he developed a cough with much mucopurulent sputum. There was dullness over the lower portion of the left lung, and mucous râles were heard all over the left side of the chest with lack of normal resonance. He was very weak, had night sweats, and lost several pounds. The red blood count at that time was 3,650,000; the white, 15,000; and there was a slight rise in temperature when he was examined on June 15, 1922. After a time he improved and returned to work, but did not regain his former strength and has only been

able to work part of the time. During the winter of 1924-1925 he developed a severe form of shingles, which persisted for several months in spite of careful treatment. During the winter of 1925-1926 his cough became more severe, and during the last two years the right lung has become involved. Repeated examination of the sputum has shown no tubercle bacilli, but roentgenological examination showed a fibrosis. He gave no history of any venereal disease, and no Wassermann test was made. Recently he was referred to the Mayo Clinic, where they made Kolmer's modification of the Wassermann test on the blood and found it positive. Since then he has received three intravenous injections of arsphenamine and two intramuscular injections of potassium bismuth tartrate, with butyn, and had made marked improvement. He is now working every day.

**DR. TICE:** The patient whose history was just read was looked over hurriedly a few moments ago. Practically no physical signs are present at this time. From the history one would suspect a pulmonary tuberculosis. There is little to be demonstrated in this case, but it gives an opportunity to refer to syphilis of the lung, a condition that is not infrequent. It may be either of the congenital type, the so-called "white pneumonia," or it may appear later in the form of a gumma, either single or multiple. There may be miliary gummata, or syphilitic consolidation, or perhaps more frequently a fibrosis beginning in the hilus of the lung. Presumably this more frequently extends downward, but, so far as we have observed, it more frequently extends into the upper lobe than the lower.

The diagnosis is often difficult. The symptoms are usually those of pulmonary tuberculosis: cough, temperature, loss of weight and strength, and hemorrhages. Repeated examination of the sputum is negative for tubercle bacilli, which may likewise occur with tuberculosis. In the roentgenological examination the shadows are quite similar to those of pulmonary tuberculosis. The history of a specific infection, the presence of a positive Wassermann reaction in the blood or spinal fluid, or other associated lesions may give a clue to the diagnosis. There must be sufficient observation to exclude a possible tuberculosis, if this can be done, and the third proof is the therapeutic test. The patient should be placed upon antisyphilitic treatment, which usually brings gratifying results. That is what has occurred here, for this man is responding very well to this therapy.

**CASE 3.—*Lung abscess. Empyema.*** DR. WILSON: This patient came under observation on October 1, 1925, when he was thirty-nine years of age. There was no history of tuberculosis or carcinoma in the family. In the personal history we find that he had mumps, tonsillitis, influenza, and rheumatism. He

was thrown from a hay-binder two years ago, and injured the chest and ribs on the left side, but felt better after four or five days. About a year later he noticed pain in the chest, which persisted for about two days. He then had a quinsy sore throat with purulent expectoration, which lasted for three weeks and then subsided, to reappear two weeks ago. There was severe pain in the chest, difficult and painful respiration, and mucopurulent expectoration. He complained of night sweats, inability to sleep at night, and chills and fever. On October 10, 1925, he felt nauseated and vomited. On January 28, 1926, he had a hemorrhage and is said to have spit up half a cupful of blood. Previous to this he had an attack of "flu." There has been no bloody expectoration since that time, but he has complained of weakness.

DR. TICE: There are symptoms here that are at once suggestive or conclusive. (Presenting  $x$ -ray films). In this picture you can see in the apex of the lung an abscess cavity with a (indicating) fluid level, which shifts with the change of position. In this plate you can see the definite shadow of the abscess, in this case following after a tonsillectomy. On the second day after the tonsillectomy there was a rather pronounced hemorrhage. This was followed by temperature and later with purulent sputum.

This is another picture of the same patient with somewhat more extensive involvement than was visible at first.

Here is another with involvement of the right lower lobe with no cavitation. Here is another of the right upper, and one of the right lower. Here you can see slight evidence of cavitation, with no fluid level.

Pulmonary abscess is comparatively frequent, frequent perhaps for two reasons: first, because of the type of the infection or "flu," with the

hemolytic streptococcus producing local destruction; and, second, because of the frequency of tonsillectomy. Moore states that pulmonary abscesses occur in a percentage of 1 to 200 tonsillectomies. In our entire group the pulmonary abscess has followed tonsillectomy except in two instances. In each of these individuals, with one exception, ether was used as an anesthetic. One pulmonary abscess followed local anesthesia.

Considerable work of much interest has been done by Dr. D. J. Davis on these pulmonary abscesses, with the determination of the presence of a Vincent's infection, the diphtheroid bacillus, with the spirillum. These are practically always present, particularly where the expectoration becomes foul and extensive. On this basis the use of arsphenamin or neoarsphenamin is advised. As a rule, after a few injections there is prompt recovery. Some of the pulmonary abscesses will give a good history, and on examination the physical signs of abscess or cavity be found, but oftentimes the signs are wanting. If the infection is sufficiently near the surface of the lung the findings may be those of pneumonia, or of a pleurisy, or empyema.

The diagnosis is easy enough where we have the  $x$ -ray evidences of cavitation and possibly a fluid level in the abscess cavity.

Surgical treatment may be required if the medical management is not successful: artificial pneumothorax, drainage of the abscess, lung resection, or a thoracoplasty.

Broncoscopic irrigation of the abscess cavity may be of service, if so located that it can be reached.

## OLD INJURIES OF THE CARPAL BONES\*

BY EMIL S. GEIST, M.D.

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Injuries of the carpal bones are by no means excessively rare. The thirty-six cases reported here were seen in a period of seven years of private practice. During the same time one hundred fifty-one cases, new and old, of Colles' fracture appeared for examination and treatment. In other words, about 20 per cent of this series of cases of injuries to the wrist joint were injuries of the carpal bones. It behooves the surgeon, therefore, to be on the lookout for this type of

lesion, especially so since the mode of injury in most cases does not give a clue to the diagnosis. The character of the trauma is usually a fall on the extended wrist, a "kick" from an automobile, exactly as in Colles' fracture.

It is important to make an exact diagnosis, and this can be done only by means of the Roentgen ray. Every wrist injury must be carefully studied with its aid. Pictures should be taken of the uninjured wrist for the sake of comparison in every case; the pictures should be made in two planes; the "stereo" gives much aid. Exact diag-

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nosis is necessary because the treatment of an injured carpal bone differs much from that of a Colles' fracture; also because the prognosis differs materially.

The thirty-six cases in this series were divided as follows:

Fractures of the scaphoid.....	23
Dislocation of the scaphoid.....	3
Dislocation of the semilunar.....	8
Multiple fracture of carpals.....	1
Fracture resulting in loose body.....	1

While fractures of the scaphoid are the most frequent, one could be led to suppose, by studying the literature of the past five years, that dislocation of the semilunar occurred more frequently than any other lesion of the carpals. This is not so; of twenty-three available references published during the past five years, fourteen deal with dislocated semilunars, while only seven discuss fractures of the scaphoid.

All of the cases here reported were "old" cases; that is to say, they were of over three months standing. These were:

From 3 to 6 months.....	13 cases
From 6 months to 1 year.....	5 cases
From 1 year to 4 years.....	11 cases
From 4 years to 6 years.....	6 cases
Over 16 years after injury.....	1 case
As to sex, there were:	
Males .....	29
Females .....	7

Showing that it is those in active life who are the most prone to this injury. In age, the patients varied from eighteen years to fifty-five years.

The complaints and the reasons why these patients came for relief were very similar, no matter what the exact anatomic lesion later proved to be. Pain was the chief symptom complained of in thirty-one cases. The pain in a few instances was constant; in most cases pain ensued afterwards and was increased by use.

In a few cases it was severe enough to keep a man from his regular work; in the remainder it always seriously hampered the patient in his occupation. Weakness was the next most frequent symptom (28 cases). Sixteen cases were characterized by marked swelling on use. Ten cases complained of numbness of a portion of the palm of the hand and some of the fingers.

On examination the most frequent physical sign encountered was limitation of motion (32 cases). It was most marked in the cases of semilunar displacement.

Tenderness over the injured carpal bone was the next most frequent sign. This tenderness,

which is situated directly over the injured bone (usually on the flexor surface of the wrist), is of some diagnostic importance, although not too much reliance can be placed on this sign. All of the cases of luxated semilunars presented a distinct, rigid fullness on the flexor surface of the wrist, while in the remainder of the cases, the swelling was generalized.

In eight cases there was nerve involvement due to pressure on the median nerve; there existed paresthesia of the flexor surfaces of second, third, and fourth fingers. This sign was constant in all cases of semilunar displacement.

I made the following estimates as to degree of disability existing at the time of the first examination:

1 per cent to 30 per cent.....	5 cases
30 per cent to 50 per cent.....	7 cases
50 per cent to 75 per cent.....	18 cases
75 per cent to 100 per cent.....	6 cases

Operation was advised in twenty-four cases and was performed in eighteen cases. Operation was advised against in twelve cases because the degree of disability did not seem to warrant operative procedure.

Operations (removal of injured bone or reposition) were performed as follows:

Fracture of the scaphoid.....	11 cases
Dislocation of semilunar (removal) .....	2 cases
Dislocation of semilunar (reduction) .....	5 cases

The late operative results in these cases were, for the most part, gratifying. The following are excerpts of letters received from some of these cases. No cases here reported in which the operation was done less than eighteen months ago.

CASE 1. (No. 6198): Fracture of scaphoid. Extirpation. "I am glad to say the wrist is in every way and shape as good as it was before with the exception of a trifle weaker when it comes to a show-down. However, I am doing carpenter work every day, and it never bothers me at all. I am very pleased with the outcome of it all; practically full motion, too."

CASE 2. (No. 6696): Fracture scaphoid. Extirpation. "I have been checking up on my thumb for the last few days. Once in a while it feels a little sore, but, if I stretch it a little, the soreness disappears. I played foot-ball all last season without having it bandaged, and it did not bother me then. It seems just as strong as it ever was."

CASE 3. (No. 4484): Fracture scaphoid. Extirpation. "My wrist is by no means perfect. However, it causes me no pain and I can do most any kind of work. I do practically all my own building repair work on the farm, which requires the use of saw and hammer. The wrist is quite stiff, and my grip is not as good as my left hand. The grip is better on larger objects. I am quite well pleased with the results."

CASE 4. (No. 418): Fracture scaphoid. Extirpation. "Yours of the 11th received. I have no complaint to make regarding my wrist. It is stiff, of course, and at times gets quite lame. I find that if I do not wrench or strain it, I have little trouble. Of course I can do no heavy work; in fact, since you removed the bone I have done no hard work with it. I am troubled sometimes with a sharp pain in the back of my head; this usually lasts two or three days and then leaves."

CASE 5. (No. 3172): Fracture scaphoid. Extirpation. "In regard to my wrist, will say that while it is stiff and I haven't much of a grip in this hand (left), I am able to work right along and it gives me no bother."

CASE 6. (No. 2024): Dislocation semilunar. "Regarding my wrist (right), will say it is nearly as good as it was before the accident occurred. Of course it was several months before I could completely close my fingers or grip anything, or completely flex my wrist, but by constant passive motion on my part regained its strength."

CASE 7. (No. 9400): Dislocation semilunar. This man was operated on by the Davis method on November 20, 1924. Since wound healing was terminated, physiotherapy was instituted, and the man was back at work two months following his injury. Four months after the injury the wrist was absolutely normal in every respect, the man doing full work without any complaints whatever.

CASE 8. (No. 9517): Dislocation semilunar. In this case the Davis operation was done three months after the injury. Wound healing was uneventful. Physiotherapy and massage were used for about three and a half weeks. Three months later the man was back at work with a one-hundred per cent wrist.

CASE 9. (No. 9565): Dislocation semilunar. A typical Davis operation was performed; wound healing was uneventful excepting that the after-treatment was complicated by an attack of delirium tremens. Physiotherapy was begun two weeks after the operation and was continued for about one month. Three months later the man was back at work with a 100-per-cent wrist.

CASE 10. (No. 10193). Dislocation semilunar. Fracture of scaphoid. A typical Davis operation was done here in order to reduce the dislocated semilunar. Since the fragments of the fractured scaphoid lay in good apposition, it was deemed wisest not to do anything about the scaphoid fracture. The dislocated semilunar was reduced by the Davis method.

On account of the presence of the fracture of the scaphoid, return to function was slow. Nevertheless, six months following the operation, patient reported that she is using her wrist with practically no discomfort, that there occasionally is a little weakness in the wrist; beyond this, she notices no discomfort. X-rays taken six months after the operation show that the semilunar is in good position; that, however, bony union of the scaphoid has not occurred.

There were two cases in which there existed a displacement of the distal carpal row. In one case, operation was advised and was done. The dislocation was reduced with difficulty by open operation

but the end-result was not satisfactory, according to a recent letter from the patient. There was one case of "loose body" in which the loose body consisted of a broken-off fragment of the cuneiform bone lying loose in the joint. On removal of this all symptoms abated.

#### COMMENT ON FRACTURE OF THE SCAPHOID

These fractures when seen fresh should be treated expectantly. If there is much fragmentation, one might as well remove all the fragments immediately for in a case of that sort we can be sure that the wrist will always be painful. On the other hand, if, as often occurs, there exists a simple linear fracture across the neck of the scaphoid, then I believe expectant treatment should be followed. Kellogg Speed, of Chicago, in a recent paper before the American Orthopedic Association, advised immediate removal of the entire scaphoid in all cases of fracture, no matter when seen. I believe this advice is somewhat radical, as I personally have observed a number of cases of scaphoid fracture of the linear type which did very well without operation; in fact, the patient obtained a nearly normal wrist.

Fixation should not be prolonged beyond five weeks. Two authors (Todd and Sauer) advise extirpation if there is pain on motion at the end of six weeks. This is perhaps a trifle early. Todd wishes to prevent the occurrence of arthritis. Fractures of the scaphoid often do not unite and it is the general rule to find non-union existing at time of operation.

Just why union does not occur in these fractures of the scaphoid has never been fully explained. It is quite the usual thing to find absolute non-union when operating on these cases one or two years following the date of injury. There is no sign of callus formation, and the fracture surfaces look as though the injury had taken place but a few days ago. Much has been said that occasionally the scaphoid may be normally divided. I have never encountered this condition.

Regarding the treatment of old fractures of the scaphoid, it may be said that the amount of discomfort and disability should be the guiding factor in deciding for or against operation. When the disability approaches 50 per cent or thereabouts, I believe that we are justified in advising the removal of the bone. If an operation is done, it is my opinion that all fragments of the scaphoid should be removed. In our series the most favorable reports were obtained when we removed all fragments. The late results reported in this series, together with those few other definitely reported late results in recent literature, show that extirpation of the en-



tire scaphoid gives improved, sometimes quite normal, wrists in properly selected cases.

#### COMMENT ON DISLOCATION OF CARPAL SEMILUNAR

In fresh cases immediate reduction should be tried. There are abundant reports in the literature showing that it can be done in many instances by manipulation. After reduction the wrist should be held in maximum flexion for several weeks. When it is impossible to reduce by the closed method, the operative method of Davis should be employed. (Surgery, Gyn. and Obst., 1923.) The wrist joint is entered by means of a posterior incision which is placed directly over the semilunar bone. On entering the wrist joint, the space normally occupied by the semilunar will be found filled in fresh cases with organizing, fibrous tissue. In old cases the space will be found to be entirely filled by a very dense, tough, fibrous tissue. This must be carefully removed so that all the normal articulating surfaces which bound the cavity lie distinctly in view. In the depth of the wound will be seen lying the dislocated semilunar bone. In old cases it will be found very adherent to the surrounding structures. By means of careful, blunt dissection, it should be entirely freed from the surrounding tissues. Following this the bone should be reduced by means of the Davis bone skid, or some other similar instrument. Care should be taken not to injure any articulating cartilaginous surface. It does not require much force to effect reduction. After the bone has been reduced it will be found that it can be held in place only by flexing the wrist, and keeping it flexed. Any attempt at extension during the operation will result in a redislocation. Davis advocates his method in cases up to three months, believing that reduction by this means can be accomplished only within the first three months. One of our cases was a four months' case, and, personally, I believe that this time limit can be materially extended, possibly indefinitely. I believe the Davis operation to be a great advance in the treatment of this not at all infrequent condition. Up to now the treatment advised has been extirpation of the semilunar bone through an incision made on the volar surface of the wrist. The removal of this bone is, in the first place, a mutilating operation, and the wrist joint after this procedure, while quite serviceable, is never as strong as it was before injury. The operation of removal of the bone through an anterior incision is also fraught with some danger, as it exposes to considerable trauma the median nerve, which is stretched over the dislocated sem-

ilunar. In two cases I have seen serious injury to the median nerve done during the operation.

To summarize, in dislocation of the semilunar, bone reduction by manipulation should be immediately tried. It will not be found always successful. When we fail to reduce the semilunar by closed means, then we should adopt the open operation as advocated by Davis, of Chicago.

The injuries to the carpus referred to above are easily overlooked. Practically all of the cases that report at the office of the orthopedic surgeon, arrive as "late cases." They usually give a history that the case for weeks or months had been diagnosed as "chronic sprain." In general, these are a class of cases where the unwary can easily be misled. The character of the injury (fall on the extended wrist or "kick" from automobile) is usually of a nature which would make one think of Colles' fracture.

Then, on examination (including the *x*-ray), if we find that there exists no fracture of the lower end of the radius and ulna, we are apt to tell the patient that he sprained his wrist and that "all will be well" in three or four weeks. These cases are usually missed even when the routine *x*-ray examination has been made in a superficial manner.

This paper, then, is essentially a plea, first, in wrist injuries not only to study the *x*-ray appearance of the lower end of the bones of the forearm, but also to pay strict attention to the condition of the carpal bones. We must remember that the two carpal bones most liable to injury are the scaphoid and the semilunar.

My second object in presenting this paper is to call your attention to the Davis method of reduction of the semilunar bone. In my opinion this is a distinct contribution to surgery, and, if generally adopted, will result in a saving of many wrists.

#### DISCUSSION

DR. N. OLIVER RAMSTAD (Bismarck): I am sorry Dr. Callander is not here to open the discussion, but we cannot let the opportunity pass without expressing our appreciation to the essayist for covering a subject that we are all interested in. We cannot hear too much about fractures. They cause a great deal of trouble, and especially fractures about the wrist or elbow. There are about fifteen bones concerned in the wrist, and it is only of late that we have given much attention to them. The need for careful *x*-ray examination and interpretation is evident in these cases. The use of stereoplates has been of great help to us in diagnosing these cases.

A study of the symptomatology is important. If the symptoms of these injuries be carefully studied we can arrive at some idea of the pathology, even without an *x*-ray.

I am not familiar with the use of the Davis method for replacement of the semilunar bone. It is certainly very valuable, and in the next case I have I am going to try it. There is a great deal of deformity from these injuries and a great deal of pain. These cases deserve better care than they have been getting from all of us. A paper of this kind will be very helpful to me and to every one of us who is taking care of these cases.

DR. H. H. HEALY (Grand Forks): I am very pleased to have heard the paper and seen the slides. I know we are going to profit very much by the discussion. I want to thank Dr. Geist very much for coming here and presenting this paper.

DR. GEIST (closing the discussion): I have nothing further to say in the way of discussion. I wish to voice my appreciation and pleasure at the opportunity of appearing before this Association.

## PAIN RELIEF IN CHILD-BIRTH\*

By JOHN H. MOORE, M.D., F.A.C.S.

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Relief from pain in child-birth is one of the greatest assets to the well-being of the average mother. Every parturient mother has a right to demand relief from suffering in labor, and, unless repeated assurance is given that labor will be robbed of its terror and agony, her antenatal care is incomplete. I make it a rule during antenatal visits to judiciously explain the methods of pain relief to be followed and so send each patient to her labor with a full consciousness that she is to be relieved of suffering, with safety to herself and her baby.

It is possible to so minimize the pain of labor by the use of analgesic and anesthetic agents that it ceases to be the dreaded ordeal it formerly was. The analgesic agents used are morphine and scopolamine or pantopon and scopolamine; the anesthetics, nitrous oxide-oxygen and ether. Morphine or pantopon will both relieve pain with equal satisfaction, but I favor the latter drug because I have found it less likely to produce nausea and vomiting. Macht, of Johns Hopkins, has found it more efficient and less depressing than morphine. It contains the total alkaloids of opium in the water-soluble form of their hydrochlorides, but is free from their inert and injurious extractive matters. Scopolamine is used in the form of scopolamine stable (Roche), as in this ampoule form a definite, reliable preparation of this delicate drug is obtained.

Analgesia or seminarcois obtained by the use of morphine or pantopon with scopolamine is most applicable in the primiparous patient, or in the multiparous patient when the first stage is protracted and painful, particularly in those who look back with dread upon a previous agonizing labor. It is employed only in the first stage of labor. I make it a rule to give no

morphine, pantopon, or scopolamine in the second stage of labor and not within three hours of the expected birth.

A general anesthetic is given with each pain whenever the method of seminarcois does not give sufficient relief; or in cases not adaptable to seminarcois, just as soon as the patient wants it. There is but one rule followed in determining the time for beginning the analgesia or anesthesia, namely, the suffering of the patient. Something is given for the relief of pain just as soon as the patient begins to feel uncomfortable, no matter how early in labor.

I use the following method of seminarcois: As soon as labor is established pantopon, gr. 1-3, with scopolamine, gr. 1-100, is given subcutaneously as the initial dose. A second dose consisting of scopolamine, gr. 1-100, is given thirty to forty-five minutes later. Beyond this point the frequency and size of the doses of scopolamine, varying from gr. 1-200 to gr. 1-400, are determined by the reaction of the patient and the progress of the labor. It is here that a fine discrimination and careful observation of the patient are of greatest importance. Schwarz and Krebs, in an article on seminarcois, define two boundaries. The loss of locomotor co-ordination marks the one boundary of seminarcois. The patient is requested to put the index-finger to the tip of the nose, the eyes being covered. If she succeeds in doing this promptly she still retains locomotor co-ordination, and the contemplated injection of scopolamine is given. However, if she moves the finger around vaguely and misses the mark she has lost locomotor co-ordination, and the injection is omitted or the dose reduced. The second boundary described by these authors is reached when, during a labor pain, the patient's pupils no longer show the usual dilatation at the height of the contraction

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because they are already dilated to the maximum by the action of the scopolamine on the terminals of the third nerve in the iris. The patient must cross the first boundary, marked by loss of locomotor co-ordination, but must be kept from crossing the second boundary, which means that too much scopolamine has been given. I have found these tests of great value and would urge their adoption in this type of obstetrical analgesia.

The pantopon is rarely repeated, although occasionally in a long first stage, gr. 1-6, is given with scopolamine. Where morphine was used in place of pantopon the dose was gr. 1-4 for the first injection and gr. 1-8 when additional morphine was given.

The choice of the general anesthetic to be used varies with the conditions found in each individual labor. For the intermittent type of anesthesia, used either alone or to re-inforce seminarco-sis, I prefer nitrous oxide-oxygen. Aside from the fact that it is agreeable to take and acts quickly, it possesses a further advantage in that it does not inhibit pains as much as ether. Much of the anesthetic effect of nitrous oxide-oxygen is lost, however, unless the anesthetist learns how to "beat the pains." The optimum effect is only obtained when the gas is given immediately upon the onset of the contraction. To wait until the contraction is well under way or until the patient makes an outcry is to give her little or no benefit from the anesthetic. This applies with equal force to any general anesthetic given intermittently for the relief of labor pains. Ether may be used for this type of anesthesia with satisfactory results if the administration of it, as with nitrous oxide-oxygen, is started early with each contraction. Ether should not be given intermittently by the drop method, as in giving it for each labor pain the best results are obtained when a large amount is given in a short time. For this purpose the closed cone is more satisfactory.

In giving any general anesthetic intermittently for the relief of labor pains I instruct my anesthetist to place one hand over the fundus and as soon as a beginning contraction is felt to start the anesthetic. There is usually an appreciable time of a few seconds that elapses between the onset of the contraction and the time that the patient would begin to complain of pain, and it is in these seconds that the anesthetic has its best opportunity to control the pain. At such times the patient will breathe deeply and so will come quickly under the influence of the anesthetic, so that when the height of the pain is

reached she is not conscious of it. One occasionally encounters a patient in whom the pains are abrupt and severe at the onset. In such cases my practice is to keep the mask constantly on the face, use a light continuous anesthesia as necessary, and increase the anesthesia as needed to insure comfort with each contraction.

The proportion of oxygen to nitrous oxide varies with the individual susceptibility of the patient, but until that factor is determined, a mixture of 90 per cent nitrous oxide with 10 per cent oxygen, as for the induction stage of surgical anesthesia, is used.

When, in the course of an intermittent nitrous oxide-oxygen anesthesia in labor, the pains approach the continuous type, rendering differentiation difficult or impossible, a continuous anesthesia is employed. In such cases the mixture is from 70 to 80 per cent nitrous oxide with 30 to 20 per cent oxygen. Lundy's admonition to "keep the patient pink" is of paramount importance. While a transient cyanosis may do no harm, any prolonged cyanosis is dangerous.

Ether is employed in most cases for operative deliveries, although in some sufficient relaxation is obtained with nitrous oxide-oxygen to permit of an outlet forceps operation.

The following is a tabulation of the kind of analgesia-anesthesia employed in the last 300 cases which I have personally delivered prior to July 1, 1926. There were 112 primiparæ and 188 multiparæ. These are all hospital cases.

Nitrous oxide-oxygen alone in.....	93
Pantopon or morphine with scopolamine and nitrous oxide-oxygen in.....	74
Pantopon or morphine with scopolamine, nitrous oxide-oxygen, and ether in.....	57
Panopon or morphine with scopolamine and ether in .....	31
Ether only in .....	28
Nitrous oxide-oxygen and ether in.....	17
The method of delivery was as follows:	
Low forceps .....	143
including manual rotation of posterior positions and subsequent forceps deliveries.....	32
Spontaneous births .....	137
Podalic versions and extractions.....	11
Breech labors .....	9
Total .....	300

The fetal mortality in cases delivered after the sixth month of pregnancy was—

1. Still-born, nine, or 3 per cent. Three of these were in cases of eclampsia where a diagnosis of a dead baby was made before the onset of labor; two cases of prolapsed cord and arm,

delivered by version and extraction; one acute polyhydramnios with beginning maceration of the infant; one placenta previa lateralis complicated by a toxemia of pregnancy; one toxemia of pregnancy with labor at seven and one-half months and enormous infarcts of the placenta; and one unusually large baby after long labor in a primipara.

Of those living and viable at the onset of labor three, or 1 per cent were still-born.

2. Died in the first ten days, three, or 1 per cent. One baby, delivered spontaneously, died six days after birth. Autopsy showed hypertrophied Jackson's membrane with generalized peritonitis. One baby died two days after birth of melena neonatorum, forceps delivery. One baby delivered spontaneously at seven months died a few hours after birth of atelectasis pulmonum.

There was no maternal mortality.

It will be noted that in this series there were 143 forceps deliveries. Many of these would have resulted undoubtedly in spontaneous births had they been allowed to continue long enough in labor, but I am convinced that the prophylactic forceps operation used both conserved the mothers' strength and minimized their suffering and was of benefit to the babies by preventing prolonged pressure on their heads. In the 32 cases where posterior positions were diagnosed manual rotation, after complete dilatation of the cervix, was practiced and the deliveries terminated by forceps. Here it may again be stated that a large number of these posterior positions would have doubtless rotated spontaneously had they been given sufficient time, but not without needlessly prolonging labor.

Any method of shortening labor may be abused, and frequently with disastrous results, especially where the cervix is not completely obliterated; but with the head well through the cervical canal, or at least with the cervix com-

pletely obliterated and the os dilated, the prophylactic forceps operation has a real place in relieving the pain of child-birth by shortening the second stage of labor.

The relief of pain in child-birth by the use of the analgesic and anesthetic agents outlined and by the shortening of the second stage of labor requires careful supervision upon the part of the attendant. Such supervision means a quick recognition of danger signs in mother or baby. Regular and frequent auscultation of the fetal heart tones will give a reliable index of the baby's condition during labor and should be faithfully employed. I have not found a single case where the baby was affected unfavorably by the type of analgesia or anesthesia used. From the standpoint of the mother there is no doubt but what the relief of pain during labor, together with the close observation necessary successfully to accomplish this, has greatly reduced complications in labor and the puerperium.

In conclusion, let me emphasize the importance of individualizing each case and adopting that form of analgesia or anesthesia best suited to it.

For the relief of pain in child-birth there are several methods that give excellent results. I have outlined a combination with which I have been successful. The obstetrician who would do the best by his patients is the one who familiarizes himself with all the better methods and then is governed in his selection of them by the case at hand.

The time is past when the wisdom of relieving pain in child-birth is longer a debatable question. We are all working toward the same end, the relief of suffering humanity, and surely with that end before us we cannot fail to recognize and remedy the status of that longest and most patient sufferer, the parturient woman.

#### REFERENCE

Scopolamin-morphin Seminarscosis: Report of its use in the third thousand deliveries in Barnes Hospital. O. H. Schwarz, M.D. and O. S. Krebs, M.D., St. Louis. Jour. of A. M. A., September 29, 1923.

## HOW A MEDICAL-PRACTICE ACT WAS ENFORCED IN SOUTH DAKOTA

The following report of a case of law enforcement appears in *The Weekly Item* of Revillo, S. D., and is self explanatory. Comments are made upon it in our editorial pages.

—THE EDITOR.

#### A COMMUNICATION

Editor *The Weekly Item*:

As we have been having quite a bit of scarlet fever of late, especially at Strandburg and vicinity, and

there has seemed to be more or less misunderstanding as to personal rights in the matter and the duties of the duly appointed Health Officers, I beg to submit the following:

Extracts from "Public Health Laws and Regulations," published by the South Dakota State Board of Health:

#### COMMUNICABLE DISEASES

The following regulations have been duly adopted by the South Dakota State Board of Health and



Medical Examiners, approved by the Attorney General and given regular publication.

Violations of these regulations are misdemeanors, and fines collected for violations thereof are paid into the state treasury. J. F. D. Cook, M.D.,

Supt. and Executive Officer.

Note.—Every case of infectious or communicable disease is primarily the source of infection from which other cases may directly or indirectly develop, and efficient measures taken to prevent the spread of infection from them will accomplish the best results.

The early recognition and immediate notification of communicable diseases by the physician in attendance is the foundation upon which public health work is based.

It is the function of the health officer to prescribe and enforce measures for prevention and spread of infection, and this should be done by co-operation with the attending physician and citizens.

Regulation No. 4. Quarantine is defined to mean and include

(a) Strict isolation of the person sick and of those attendant upon him, in a room screened from flies and mosquitoes.

(b) Absolute prohibition of entrance to or exit from the building of any person except the attending physician, health authorities, or any person or persons especially authorized by health authorities.

(c) The following named diseases shall be placed under quarantine: acute anterior poliomyelitis, diphtheria, cholera, plague, scarlet fever, typhus fever, yellow fever.

Regulation 260. Section (d) All persons exposed to any of the above named diseases within a time less than the incubation period of the disease to which exposed, shall be placed under quarantine until the expiration of the incubation period of such disease.

Regulation No. 8. School children, teachers or others having to do with children, shall be excluded from day school, Sunday school or any public or private gathering whatever for two weeks of observation after the last exposure to any case of scarlet fever or diphtheria within the household.

Regulation No. 11. Whenever a local health officer is informed or has reason to suspect that there is a case of smallpox, scarlet fever, diphtheria, etc., within the territory over which he has jurisdiction, he shall immediately examine into the facts of the case and shall adopt the quarantine or employ the sanitary measures directed by the State Board of Health in dealing with such cases.

Regulation No. 16. No milk, butter or other food or food products to be eaten raw shall be sold or given to any party or delivered to any creamery or butter factory, store, shop or market from a house where a case of scarlet fever, diphtheria, smallpox, chickenpox, typhoid fever, acute anterior poliomyelitis or measles exists. The sale of such food or food products is forbidden from farm premises where any of the specified diseases exist, except under the following conditions.

#### SCARLET FEVER

Regulation No. 63. Quarantine. The local health officer having knowledge of or reason to suspect the existence of scarlet fever, shall investigate, if necessary, and shall at once place under quarantine all persons afflicted with scarlet fever and those having the care of and coming in contact with such patients, except the attending physician, health officer, sanitary inspector, or, in case of death, a licensed embalmer.

Regulation No. 64. The quarantine period for scarlet fever shall never be less than three weeks and may be longer. Quarantine must not be released until the health officer has satisfied himself that the desquamation (or peeling) is completed, and that the condition of the nose and throat is normal.

Regulation No. 97. The local board of health of every city or town shall require every teacher to report each morning to the head of the school the case of every child belonging to his or her room who shows signs of being in ill health or suffering from a communicable disease; also every child returning to school after an absence on account of illness of unknown cause. The head of the school, on receiving such report, shall as soon as possible thereafter notify the local health officer. Whenever in the opinion of the head of the school a child's condition requires that he or she be sent home, or whenever a child shows symptoms of smallpox, scarlet fever, diphtheria, measles, chickenpox, tuberculosis, influenza, tonsillitis, erysipelas, whooping cough, mumps, itch, trachoma, ringworm, head or body lice or such other condition or conditions as affect the comfort and well-being of the school, he or she shall send such suspect home immediately or as soon as a safe and proper conveyance can be found, and the local health officer shall be notified at once by the head of the school of such case.

While we have had a slight misunderstanding in the matter of communicable diseases, especially in the Strandburg territory, I am pleased to be able to state that all but one family have been cleared up and fumigated, and the last cause of contention amicably adjusted, as per the following:

State of South Dakota, County of Grant, ss.

Gustaf E. Rydquist, being first duly sworn, deposes and says:

That he has been stationed at Strandburg, S. D., for the past nine years, as resident pastor of the Tabor Lutheran Church, and has also acted as pastor of the Grace Lutheran Church of LaBolt for the past five years;

That he has also been engaged in the practice of medicine since 1918, and admits having taken many patients, to be treated or operated upon by Dr. —.

That he, the said Gustaf E. Rydquist, hereby agrees to entirely cease and desist from further practice of medicine in any form whatsoever, and from acting as "capper" or "steerer" in inducing patients to go to Dr. — or any other doctor whomsoever.

That he hereby agrees to announce from his pulpit at Strandburg and at LaBolt, at the first regular public service, in the English language, his absolute retirement from the medical field in all its

branches, including obstetrics, either at his home or elsewhere, and publicly requests his people to refrain from calling or consulting him in any manner along medical lines.

(Signed) Gustaf E. Rydquist,

Subscribed and sworn to before me this 22nd day of December, 1926.

Harry E. Jones,  
Notary Public, Revillo, S. D.

Trusting the foregoing will explain some acts that

may not have the hearty approval and co-operation of a few misguided persons and that they will now realize that the State Board of Health's Rules and Regulations are applicable to everyone and for the protection of the public health and must be obeyed, I beg to subscribe myself,

Yours, in the interests of good health and fair play.

E. O. CHURCH, M.D.,  
Vice-president of County  
Board of Health

## PROCEEDINGS OF THE MINNEAPOLIS CLINICAL CLUB

Meetings of September 23 and October 21, 1926

### MEETING OF SEPTEMBER 23

The regular monthly meeting of the Minneapolis Clinical Club was held at the Elks Club on Thursday evening, September 23, 1926. The meeting was called to order by the President, Dr. R. C. Webb. There were eighteen members present.

The paper of the evening was given by Dr. Archie H. Beard, entitled "Lipiodol as a Diagnostic Agent in Pulmonary Affections."

Cases and x-ray pictures were presented.

#### DISCUSSION

DR. F. F. CALLAHAN (Pokegama, Minn.—by invitation): I think Dr. Beard has made an excellent survey of the work done on lipiodol. It seems that, taken by and large, the simplest technic is the most desirable in the average case.

Most of us can remember how quickly we dropped cutting down on a vein in giving salvarsan, and also incising down to the pleura for establishing an artificial pneumothorax. We shall probably see lipiodol administration take the same trend. When the supraglottic method fails we can always turn the case over to the bronchoscopist.

All patients should have thorough postural drainage before the injection is made.

The most important field of lipiodol will probably be in the diagnosis of obscure lung conditions. Its use in tuberculous cases will be limited, but should be of great value in differentiating between cavities and annular shadows in quiescent and apparently arrested cases. In extensive lung fibrosis in which the patient's disease is quiescent but where there is a marked pulmonary incapacity, I believe a vital capacity test might be desirable before injecting lipiodol.

It is quite probable that the injection of lipiodol and similar substances will aid greatly in the treatment of chronic pulmonary suppurations for which we are doing very little at present.

The palliative results in asthmatics are also most encouraging.

### MEETING OF OCTOBER 21

The regular monthly meeting of the Minneapolis Clinical Club was held at the Elks Club on Thursday evening, October 21, 1926. Dinner was served at 6 P. M., and the meeting was called to order at 7 P. M., by the President, Dr. R. C. Webb. There were fourteen members present.

The minutes of the September meeting were read and approved.

The President gave the report of the Council meeting.

Dr. Floyd Grave read a paper entitled "Complement Fixation in Tuberculosis."

#### DISCUSSION

DR. LAJOIE: How do they compare, in your experience, with the ring test?

DR. GRAVE: I do not believe the ring test is as reliable as the complement-fixation test. This also applies to the Tubercumet test. When we have had requests to do these tests we have always run a complement-fixation test as a check. I do not believe the ring type of test is working out as we hoped it would.

DR. ANDERSON: How about the test in spinal fluid?

DR. GRAVE: While this work was in progress, I ran across a paragraph in *Laboratory and Clinical Medicine* by Kilduff, in which the complement-fixation test was suggested as a means of early diagnosis. Following this suggestion we did a number of tests. In all cases of tuberculous meningitis we got a positive complement-fixation. With this result to judge from, I believe the test is extremely valuable as the earliest means of diagnosis.

I do not want to give the impression that the complement-fixation test for tuberculosis is as reliable on tuberculosis as the Wassermann is on syphilis, but I do believe that it is of great value and is a comparatively neglected but valuable procedure.



DR. McCARTNEY: What type of tuberculosis were these cases? Have you done any work on other types, that is, glands, bone, etc.?

DR. GRAVE: The majority were pulmonary cases, but we have done a few on gland and bone cases. It does not seem to be as reliable on these cases as on the pulmonary cases. The extrapulmonary cases without a pulmonary lesion also often gave negative tests. I do not know how to explain this unless there is a different strain of organism causing the lesions.

DR. HAYES: How about peritonitis?

DR. GRAVE: They have given positive tests in my experience, but all the cases I have seen have also had pulmonary lesions.

DR. LAJOIE: You were dealing with active tuberculosis, not healed?

DR. GRAVE: In healed tuberculosis it may be positive or negative; however, I would like to qualify this with the statement that we considered some healed from clinical signs. I think before a case is considered healed the test should have become negative. As healing progresses, it has been my experience that the test tends to become negative.

Active cases without resistance to the disease are also frequently negative. This I believe in some cases may be considered a bad prognostic sign. Prognosis in such severely sick patients can be told, however, without the complement-fixation test. I believe a positive test on terminal cases shows a better outlook for a few more weeks or months of life. Often after hemorrhage the test may become negative and as the patient gets in better condition the test returns to positive.

DR. McCARTNEY: Were any cases of the acute miliary tuberculosis?

DR. GRAVE: Yes, many of the cases were pulmonary cases which developed acute miliary tuberculosis. I think this is usually the case in miliary tuberculosis; that is, there is an old lesion that breaks into the blood stream. If there is any such thing as acute miliary tuberculosis without a previous lesion somewhere in the body, I have not had the opportunity of examining them by this test. The type I have just described gives a positive test, but this depends upon the state of resistance of the patient.

DR. WYNNE: In the meningitis cases was it positive in the blood also?

DR. GRAVE: We have had most of these cases under observation over a long period of time. Numerous tests have been run on most of them. The meningitis cases were often also pulmonary cases. Some developed a severe headache without other signs at first. We feared meningitis was developing as a complication, and the spinal fluid was examined with this in view. Positive cases always terminated by meningitis. One baby with acute tuberculous meningitis gave a positive complement-fixation test, but we did not examine the blood. We have also examined a number of non-tuberculous spinal fluids. All have given negative complement fixations.

DR. SOUBA: Did you try any spinal fluid in pulmonary cases without meningitis?

DR. GRAVE: Yes, there were a number of cases with syphilis, as well as pulmonary tuberculosis. Spinal fluids were examined on these cases, and all gave negative complement-fixation tests for tuberculosis on the spinal fluid.

DR. WITTICH: When Dr. Grave gave these figures, anyone who has ever done this work would realize what a tremendous amount of time and effort had been put into it to produce such an accurate and consistent paper, and what a commendable piece of work Dr. Grave and Dr. Josewich have done. About sixteen years ago it was my privilege to be a volunteer assistant in the Trudeau laboratory at Saranac Lake where Dr. Petroff was doing the complement-fixation test for tuberculosis. Up to that time only sporadic work had been done. Then Dr. Petroff was interested also in developing various hemolytic systems in an attempt to get a better indicator. About ten years ago it occurred to me that it would be a very interesting thing to use various antigens, taking bouillon filtrate like Koch's old tuberculin, also the bacillary suspension of Miller and Zinsser and Craig's alcoholic extract or a modification of Besredka's filtrate of tuberculin, as well as Petroff's soda hydrate extract of pulverized virulent cultures of tubercle bacilli. Dr. Krause also furnished me with a watery extract of culture No. 37, which produces generalized tuberculosis in guinea-pigs, and this antigen was used as representing a pure tuberculo-proteid.

I used all these antigens simultaneously, injecting intradermally by the Mantoux method 0.05 c.c. At the same time blood was drawn from the arm vein, and complement-fixation tests were done using each separate antigen. Thus an attempt was made to correlate the skin tests with the complement-fixation tests. These patients were very carefully grouped into minimal, moderately advanced, far advanced, and doubtful cases. The results of our findings are shown in Table I, which I will pass around.

It is obvious that any test of this nature that is going to be of value is one which will be positive in the presence of minimal clinically active tuberculosis and negative when the patient is clinically arrested or apparently cured, and negative in so-called clinically negative cases. The complement-fixation test would have its greatest value when serial tests could be done from time to time because, with Petroff's antigen and technic, where the tests are correlated with x-ray plates, the tests become weaker as the patient heals. The skin test is a tissue reaction; the complement-fixation test is a humoral reaction. Once the diagnosis of tuberculosis is made, the complement-fixation test does seem to be of definite value in determining whether the case is doing well. Many boards-of-health reports, where they have been trying out the complement-fixation test with very poor equipment and technic, show varying conclusions in regard to the test. It will become practical only in well-organized laboratories with very good technicians.

Table II shows how close our skin tests came to the complement-fixation test. At that time we did not make any positive statements. In Petroff's estimation the complement-fixation test is of such value that, in correlation with other diagnostic findings, it constitutes a diagnosis of tuberculosis.

I think Dr. Grave, in calling attention to this

test as it has now been developed, has given us a very valuable and available adjunct to determine whether the case is really a case of clinically active tuberculosis which will warrant sanatorium treatment.

Dr. W. J. Kremer reported four cases of foreign body in the bladder. Two were cases of foreign body in the bladder itself; one was a case of foreign body in the bladder and urethra; and the other was a case of foreign body in the urethra. All were cases in which the foreign bodies had been introduced through the urethra.

#### DISCUSSION

DR. WYNNE: I should think that it would be a very simple procedure in women to remove these foreign bodies through a vaginal cystotomy.

DR. KREMER: That has been mentioned, but some surgeons think there is great danger of infection and fistula.

DR. WYNNE: The fear of a permanent vesicovaginal fistula is not so great as many surgeons believe. We used to treat many cases of severe cystitis by the vesicovaginal fistula drainage method. When the cystitis is cured the fistula can be closed very simply. If the fistula is not made properly it is often difficult to keep it open. I removed a large stone from an old woman's bladder through the vagina. She had a severe cystitis, which responded to treatment quite rapidly, and the opening closed within a few weeks, faster than many suprapubic cystotomy wounds.

The meeting adjourned.

DONALD MCCARTHY, M.D.

Secretary

## PROCEEDING OF THE MINNESOTA ACADEMY OF MEDICINE

Meeting of November 10, 1926

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, November 10, 1926, at 8 P. M. Dinner was served at 7 P. M. The meeting was called to order by the President, Dr. F. E. Burch. There were twenty-eight members and three visitors present.

The minutes of the October meeting were read and approved.

A motion was carried that the President appoint a committee to draw up resolutions on the death of Dr. L. B. Baldwin, an Honorary Member of the Academy.

Dr. Arnold Schwyzer (St. Paul) reported two cases as follows:

1. The first case I wish to report is of a man seventy-two years old, who was brought to me by his doctor, who had operated on him eight weeks before. At that time a severe intestinal obstruction had existed, and a median laparotomy over the lower aspect of the abdomen was made. The obstruction was found to be due to a large mass at the junction of the sigmoid with the rectum. The bowels being enormously distended, it was wisely decided not to do more than a colostomy. Since the relief of the obstruction, the patient improved considerably and the doctor wanted me to see if an extirpation could and should be done. Accordingly the abdomen was reopened on May 3, 1926. The mass was found to be bulky and reached from the middle of the left linea innominata to the promontory and from this level downward into the pelvis. Boggy irregularities like packages of large lymph nodes outlined the mass toward the promontory, and the whole was

fixed to the pelvic wall. It looked as though we were going to get into collision with the left common iliac vessels and the ureter, and we decided that the man was better off with his colostomy and an attempt to hold the growth in check by radium. The abdomen was closed. In case the mass should be inflammatory it was thought best to leave the old man alone for the present, and after a prolonged rest things would become more favorable for operation on account of the colostomy. If the mass was malignant, the case was inoperable; and we inclined toward this diagnosis.

On September 20, after my return from the summer vacation, the patient was re-examined. We were struck by the splendid appearance of the man, who was, however, quite unhappy with his colon fistula, and wanted it closed if there was a possible chance. We tried to tell him that hundreds of people were living quite comfortably with a colostomy, and that just then we had heard from one of our patients that she was feeling fine and happy with her colostomy seven years after the operation (excision of the rectum for carcinoma). It was of no avail; he wanted to take the chances of resection and closure of the anus *preter naturam*. With his seventy-two years he declared he was not old enough to stay at home; he wanted to meet his friends socially and to feel clean. Here was a reason for re-operating, though we should have preferred to wait longer. It was by now more probable that we had to deal with an inflammatory condition; that is, a diverticulitis.

An x-ray examination showed a complete obstruction, and, indeed, not even a drop of water came from the colostomy opening when an enema under three feet of pressure was given per anum. The finger, inserted through the colostomy, and palpation of the abdomen made us feel that the tumor mass was considerably smaller, and perhaps operable.



On September 22, the mass was excised. The thickening reached so close to the colostomy that a reliable and clean suture seemed impossible. The stump from the colostomy down to the upper line of resection was not longer than about two and a half inches and was, of course, fixed far over to the left. This made it insufficiently accessible from our right rectus incision. A Murphy button here rendered good service. The larger half was introduced into the lower opening, which, however, seemed barely large enough for the button.

Though the post-operative course was perfectly smooth for the first two weeks, on the 15th post-operative day (October 7) the patient had some pain in the pubic area and fever of 100 degrees was recorded. We became anxious to get that Murphy button, which, on account of lack of a *vis a tergo* might stay there indefinitely and might cause an ulceration in this firm tissue of reduced vitality and elasticity, because considerable quantities of radium had been administered. On October 9 the colostomy was widened by incision, and the finger could reach the button. A strabismus hook could be introduced into the lumen of the button, and, with a good amount of patience, taking care not to cause pain, the button was delivered through the colostomy opening. A colostomy closure was made, but had to be undone the next day as flatus went into the subcutaneous tissue and caused an emphysema of the scrotum and penis, which persisted for over a week. The patient left for his home on October 24. (Note: We saw him again on November 18, when the colostomy opening was practically closed.)



The specimen, as you see here, is about four inches long. There exists no ulceration of the mucosa anywhere, though water would not even now go through it. A longitudinal section struck three diverticula imbedded in bulky, infiltrated, and hard fatty masses. Two of the diverticula contained hardened fecal matter, hard enough to be called stones. When the photograph was made one of these stones had been lost.

2. The second case is one of hydrops of the renal pelvis showing no communication with the kidney, therefore not hydronephrosis, but hydro-pyelon, a congenital anomaly. This will be reported later after further study.

Dr. C. Eugene Riggs (St. Paul) read a paper entitled "Notes on Epidemic Encephalitis."

## DISCUSSION

DR. W. A. JONES (Minneapolis): The essayist has covered the field of encephalitis very thoroughly, and has quoted, not only from the literature, but from his own experience, as well. Perhaps we are going too far in our enthusiasm about detecting a case of encephalitis when it is quite possible it is not encephalitis at all. I recently heard of a case diagnosed as influenzal diarrhea which turned out to be simply an ordinary case of typhoid fever. And we may be led in the same error unless we use better powers of analysis and classify our cases in better order and see that we have a history of the individual very carefully and thoroughly worked out.

At its meeting in Cincinnati, the latter part of October, the Central Neuropsychiatric Association had the pleasure of hearing Dr. August Wimmer, of Copenhagen. He is an authority on epidemic encephalitis and has written probably one of the most pains-taking books yet published on that subject. What interested me most was that he cited forty cases of epilepsy that he thought developed from an encephalitic condition. I presume that is quite probable, but if we are going to describe all of these so-called inherited or chronic nervous diseases as the outcome of influenza or encephalitis, we are certainly getting into deep waters. Most of these people who develop a chronic or habit disease, like epilepsy, or other disorders of this type, have behind them hereditary or inherent defective conditions, which are really part of the disease, which almost any factor might bring out and which might easily be called something else.

Hence, it is very necessary that we take more careful histories of our patients. And yet it is admitted that it is very easy for the neurologist, as well as for the general practitioner, to accept hastily the causes and effects and results of diseases because he has not taken sufficient time to probe into the type of individual with whom he is dealing, or to get a clear outline of what has gone on before.

I would take issue with Dr. Riggs that backward children and the so-called defective classes are due in any way to influenzal or encephalitic states. Certainly not unless the background was carefully brought out and if nothing existed there and there was no evidence of effect or inheritance, it seems improbable that influenza could be believed to precipitate the cause of this condition except in very exceptional and illgrounded cases. Neurologists and others are very apt to think that epidemic encephalitis is a very convenient diagnostic opportunity. But we should be extremely cautious at arriving at a definite conclusion for we know and are told, as Dr. Riggs told us, of the very peculiar and freakish things that follow epidemic encephalitis. They are peculiar and very interesting, but they can be found in patients suffering from other acute illnesses not encephalitic in origin.

Dr. R. E. Farr (Minneapolis) read a paper entitled "Shortcomings in Cleft Lip and Palate Surgery and Suggestions for Meeting Them."

## DISCUSSION

DR. H. P. RITCHIE (St. Paul): Dr. Farr's paper has been most interesting to me. He has had a very wide experience which antedates mine in this

field of work and his opinions must receive earnest attention. He brought up, among other things, two questions which are debated in the literature. One is wiring of the bone for closure of the process cleft. Quite a number support Dr. Brophy. There is an equal number who say that this should not be done because such a procedure causes a lack of development in the bone, which, as the patient grows, results in the deformity of a projecting lower jaw beyond the upper, a condition of apparent prognathus. So we have a divergence of opinion as to whether we should use wires in closing the alveolar process.

With the lip also we have a number of views. I believe there are something like ten or fifteen different plans for repair of the lip. The lip problem has been approached as a plastic repair, and there are so many different angulated, curved incisions that one is at a loss as to what should be done. To my own satisfaction I have worked this out as a general surgical operation, by which a functioning lip can be obtained by bringing the orbicularis oris muscle together in the line and plan of its action. What we should do then is to demonstrate this muscle by the Faradic battery and bring it together.

Dr. Farr mentions the bilateral alveolar cleft, calling this case tripartite. He suggests that the probolabium should be removed. But there is no question but what it appears in every normal lip, and therefore I believe it should be preserved, as I believe the length of the lip on the skin side is determined by the length of the probolabium. In all normal individuals we have the mucous membrane everted.

I think Dr. Brophy is right on the alveolar process cleft and that in cases of wide process cleft we must hold this down with a wire so that a lip can be done without severing all the normal relations of this wonderful musculature of the face and the underlying bones. I think Dr. Brophy is absolutely wrong about the hard palate cleft. I believe that lateral pressure on that cleft will result in the high arched palate as a result of the mechanical pressure.

The mortality in these cases can readily be controlled by erasing the idea that any procedure is an emergency procedure. These babies must be distinctly on the gain before they are operated on. They must be operated on without doing too much at one time. Pediatrics has come to such a point that, I think, no surgeon should undertake these operations unless he has the o. k., in writing, of the pediatricist that it is safe to do the necessary work. I believe we should erase from the lip repair the plastic idea, and approach it from the standpoint of function, and replace these tissues as nearly normal as possible with the idea that the future growth of that baby will eventually classify our work.

DR. FARR: I wish to thank Dr. Ritchie for his discussion and the elucidation of many points I have not had time to cover in my paper. I feel that the crux of the problem is to treat each case

in a comprehensive manner and to operate by the fractional method, also that each surgeon should use methods which, in his own experience, give the best results until the masters have standardized the technic. If, for instance, a certain type of lip operation is followed, one will soon familiarize himself with it and obtain satisfactory results. Further function rather than immediate cosmetic perfection should be the aim.

I visited Dr. Brophy frequently for many years and observed his work and his results. I have seen the Brophy procedure attempted by many surgeons, but have never seen Brophy's technic exactly duplicated. Brophy does not interfere with the germinal tooth roots, nor does he "crush" the superior maxillary bones; the bones are pressed together and the wires are used for the purpose of holding them in contact.

Blair is veering away from the Brophy plan and claims that the superior maxilla does not grow in proportion with its fellow after the reposition. I cannot understand why this should be. If the wires are not introduced sufficiently high the future teeth may be interfered with, the alveolar processes may be deflected, future bony development will be faulty and the teeth will be irregular and badly directed. I believe this operation is seldom carried out in accordance with Dr. Brophy's directions; in his hands the results are the best I have ever seen.

Up to a few years ago it was Dr. Brophy's custom to show twenty-five or thirty cases during meetings of the American Medical Association, and his demonstrations were most convincing. Unfortunately, very few surgeons remained for these demonstrations. One could see there patients that had been operated upon ten, twenty, or even thirty years before. They looked well and spoke well.

Considering the mortality of the wiring operation, we must not forget that over thirty years ago Dr. Brophy performed his first two hundred and eleven operations without a death.

To return to my paper, my intention was to stress the possibility of lowering the mortality by more often operating by the fractional method and the morbidity by aiming to get functional, as well as cosmetic, results. Of the innovations suggested in my paper the most important is, I believe, the closure of the palate in two stages. I have not seen this suggestion in the literature, but I believe a secondary attempt to close the palate from seven to fourteen days after failure is of sufficient merit to well repay us for the time spent in this discussion.

DR. A. T. MANN (Minneapolis): I have done this same thing, and if you can do it before the tenth day you will not have to pare the parts because your granulation tissue is there and will heal more promptly than a fresh wound.

CARL B. DRAKE, M.D.

Secretary



# THE JOURNAL-LANCET

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and The Sioux Valley Medical Association

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FEBRUARY 1, 1927

## THE INFLUENZAL SITUATION

Again we are tempted to discuss the present situation that seems to spread itself over the entire country, from Winnipeg to Miami, from San Francisco to New York. We hear repeatedly of an epidemic of colds, or at least what we call colds, and we prefer to call them that because we do not know what else to call them. They come on suddenly, they sometimes develop high temperatures very rapidly, and most of them are confined to the lower level in the neck, occasionally invading the bronchial tubes, occasionally precipitating pneumonia, occasionally, too, a typical infection of the nervous system. We are beginning to hear again of poliomyelitis and doubtless there are some cases of mild encephalitis. In this country the epidemic has not reached the same force as it has abroad, France, England, Spain, Switzerland, and other European places, so that we may reasonably expect to have our share of the epidemic sometime during the spring or perhaps yet during the winter.

All of our ordinary methods of treatment seem to be futile, that is, medical treatment. The real treatment is to go to bed and stay there until the thing clears up. That means a week or ten days, or longer, but it is the best remedy found so far, and gives the patient an opportunity to rest and his constitution to eliminate its poison. Unfortunately, there are a great many people who can-

not stay in bed, and somehow they get about and do their work in spite of their suffering, in spite of the infection of cold in the head, in spite of a protracted cough and expectoration, which they distribute very judiciously. The only way to avoid an epidemic apparently is to keep away from those who have it; but out in the clear sunshine, in a sequestered spot, one may develop a cold, so isolation is not the only thing that helps. Avoiding crowded places, badly ventilated houses where the entire family have colds, certain badly ventilated gathering places, like churches, assembly halls, and moving-picture houses, which with few exceptions have contaminated air which has been lodged there for no one knows how long. And it is in these places that we meet the cougher, the spitter, and the exhaler of germs. Even people who do not believe in germs at all, who do not believe these things exist, have these colds, and no amount of mental resistance seems to protect them.

Every doctor, of course, has his favorite remedy, and these remedies are so numerous it seems utterly useless to mention them. In individual cases there may be an antipathy, a bad reaction to certain things, to certain drugs. There has been a great revival of the vaccine theory and yet many men utterly discard it as untenable, unwise and of no value, but many physicians advise a mild injection of vaccine, which does no harm apparently. Others believe in some other form of intravenous medication. On the whole, the therapeutic remedies for coughs and colds and infections of this kind are difficult to improve upon.

Like most diseases of its type it runs a certain course, a few days to a few weeks, in spite of the fact that the victim is often obliged to keep at his daily labor. The old advice is to keep away from trouble, keep the body in order, all your eliminators functioning, protecting yourself from others and others from yourself, keeping a cheerful, uplifting demeanor and hoping for the best, and after a while your cold will be better. If any of our readers have a better remedy will they kindly send them in to the editor.

## HOW A MEDICAL-PRACTICE ACT WAS ENFORCED: A PRACTICAL OF- FICIAL HEALTH LESSON

A minister in South Dakota who persisted in practicing medicine without a license, in addition to performing his clerical duties, met his match in Dr. E. O. Church, the South Dakota health officer of the county in which the minister had his field of operation.

This minister found it easy to get the assistance of a physician when emergencies arose, as one did when it became necessary to quarantine a case of scarlet fever. The official notice of the presence of a contagious case, in the form of a card, was duly posted, but it seemed to convey no warning to the minister who was treating the case. He visited his patient, and Dr. Church had the minister quarantined for seven days, as required by law. The minister immediately appealed to the State Board of Health and the States Attorney, but his appeal did him no good. He was obliged to remain in quarantine for seven days, at the end of which time he promised to be good, quit the practice of medicine, and to announce this fact from his pulpit.

We publish on another page Dr. Church's report of the whole affair.

It is quite an interesting story and we urge our readers to look it over carefully because it may be of great assistance to others to know that a precedent has been established.

It is unfortunate that some of our reverend brethren are in the habit of going into hospitals at any time to see any patient, and it is evident from the present account of things that they can go into a house to see a contact or communicable diseased patient, but we imagine this man got the surprise of his life when he found he was bucking the laws of the State Board of Health. Too often our hospitals are besieged by itinerant pastors who have either been requested by friends to see friends in hospitals, or have decided on their own responsibility, then we are shocked to say that some of them feel they have more authority than even the physician in charge of the patient. The editor has had two illustrations of this very recently, and they show clearly that some of these reverend gentlemen have no sense of honor, nor do they respect the suffering of the patient, the convenience of the hospital, or the authority which is supposed to be invested in the hospital and its physicians. As a matter of fact, while a patient is under the care of a physician in a hospital, no one but the officer of the law can visit the patient unless with the permission of the physician. And this is one thing to keep in mind, that the doctor is supreme, particularly in his own hospital, and the clergy ought to at least consider whether it is advisable or necessary or safe to visit a patient, whether suffering from a contact disease or whether suffering from some mental disorder.

Of course any physician or any hospital that has a patient who is seriously and critically ill will not refuse the visit of the clergy any more than they would refuse the visit of a consultant. They all stand ready to do anything they can under the circumstances to provide clerical attendance for sick people.

One of the amusing situations which arose out of the South Dakota case was the fact that the minister was ordered to go to a room to have himself and his clothes fumigated, and his wife in a very agitated frame of mind inquired of the notary who took the acknowledgment of the affidavit if he thought it possible the reverend gentleman could stand to be fumigated. And we laughed, in our sleeve, to think how little some people know of what fumigation means.

## MISCELLANY

### MEMORIALS TO WILLIAM ROBBINS

MURRAY, Ph.B., M.D., F.A.C.S.

Professor and Chief of the Department of Ophthalmology and Otolaryngology

Born April 6, 1869—Died December 27, 1926

The following memorial has been adopted by the Faculty of the Medical School:

—E. P. LYON, DEAN

There are few friends so genuine, so constant, so simply friends; there are few men in medicine so faithfully, so modestly, so uniformly efficient; there are few teachers so direct, so staid, so sound, as was William Robbins Murray, whose death his friends, his colleagues, and his students mourn to-day.

He was one of those rare

"Souls, without reproach or blot,  
Who do His will and know it not,"

and one of those rare associates whom one loves and respects unconsciously, almost as a matter of course, and without sensing either the necessity or the propriety of telling him so; and he was one who loved folks in his quiet, unemotional way because they *were* his fellows and because he never wanted to be at odds with anyone. He was a gentleman in the original meaning of the old term; he was gentle alike in breeding, in manner, and in heart,—and yet he was a man among men.

His work was well done. He died an untimely death in the doing of his duty, without thought of lurking danger to himself, devoted solely, as he always was, to the competent service he could render to the sick.

"To the beauty he has wrought, to the truth that he has taught, to the comfort he has been, to the dream the poets tell," to the land where human love and memory alone can follow him, we must let him go.

It only remains to us to offer to those who loved him most and best, the assurance that we loved him too and that we share with them the sorrow that is most keenly theirs.



EXTRACT FROM THE REPORT OF THE NECROLOGICAL  
COMMITTEE OF THE HENNEPIN COUNTY  
MEDICAL SOCIETY

William R. Murray was a man of reserve and of dignity. He was honored and respected by his associates, and those who were privileged to know him well recognized in him a character of rare kindness and generosity. In his quiet, unassuming way, he has done more for the progress of medical education and for the fostering of medical ideals in his community than any one can ever know. All the honors and all the responsibilities which came to him in the course of his industrious career were proof of his real worth, for no one was ever more modest and less self-seeking than he.

The tragic circumstances of his illness and death, following the infection received in the care of a patient, have cast a cloud over our association. The life of this earnest, gentle, gifted man can truly be epitomized in the words, "He died to save another."

## NEWS ITEMS

Dr. H. P. Roust has moved from Fairmont to Ruthton.

Dr. Josephine Tofte has moved from Crookston to Dawson.

Dr. J. H. Hoskins has moved from Rolla, N. D., to Chehalis, Wash.

Dr. J. W. Andrews, of Mankato, has returned from a trip to Porto Rico.

Dr. T. G. Thompson has moved from Sioux Falls, S. D., to Dell Rapids, S. D.

Dr. W. A. Meierding has moved from Springfield to New Ulm where he joins the Fritsche Clinic.

The number of deaths in Minnesota from smallpox in 1925 was 198, while there was not one in the state in 1926.

Dr. T. A. Estrem, of the Rood Hospital, has been appointed health officer of Hibbing, to succeed Dr. G. N. Butchart.

Dr. Edwin C. Muir, of Winona, a recent graduate of the U. of M. Medical School, has begun practice at Minneiska.

Dr. Joseph Sorkness, of Fargo, N. D., has become a member of the Stutsman County Clinic of Jamestown, N. D., Department of Urology, Skin, and Venereal Disease.

The American Hospital Association will meet in Minneapolis on October 5. It is one of the big conventions of the year.

The Minneapolis General (City) Hospital has been compelled to refuse admittance to adult patients because of a lack of room.

Dr. George A. Geist, of St. Paul, was elected Chief of Staff of the Ancker Hospital of St. Paul at the staff meeting last month.

Dr. Mustapa Bin Osman and Dr. Tsou Yiu Li, of the University of Hongkong, were visitors in Rochester during the first week of January.

Dr. Toshiyuki Matsui, a Traveling Fellow from the University of Mukden, Manchuria, China, is spending some time visiting the Mayo Clinic.

The Union Hospital School of Nursing of New Ulm has been recognized as an accredited nursing school by the Minnesota State Board of Examiners.

The U. S. Veterans' Hospital at Fort Snelling has twenty-two buildings, and will be ready for occupancy in March. It cost over two million dollars.

The North Dakota Tuberculosis Association held its annual meeting in Bismarck last month, when the officers of the Association were re-elected for 1927.

Dr. Eugene W. Beauchamp, of Springfield, Mass., was married last month to Miss Marguerite Lapierre, daughter of Dr. and Mrs. C. A. Lapierre, of Minneapolis.

Dr. Rudolph C. Logefeil, of Minneapolis, returned from Europe last month where he spent several months in the European hospitals, most of his time being spent in Vienna.

Dr. H. Winnett Orr, of Lincoln, Nebraska, gave the first annual Mayo Foundation lecture in orthopedic surgery in Rochester, on January 25. His subject was "Osteomyelitis."

Dr. W. F. Schroeder, Jr., of Minneapolis, a recent graduate of the Medical School of the U. of M., has joined the Drs. Halloran, of Jackson, in general practice and hospital work.

The plans for the addition of three stories and basement to the Union Hospital of New Ulm are due from the architect to-day. The addition will provide 36 more beds at a cost of \$60,000.

The fifty-ninth annual meeting of the Minnesota State Medical Association will be held at Duluth on June 30 and July 1. An attractive program has been outlined by the Scientific Committees.

Dr. Robert L. Wiseman, of Pine City, died last week at the age of 53. Dr. Wiseman was a graduate of the Medical School of the U. of M., class of '04, and had practiced in Pine City for over twenty years.

The Montana State Medical Association will hold its annual meeting in Missoula on July 13 and 14. The speaker guests will be mainly men from the Pacific Coast, as they were from the East last year.

A petition for the removal of Dr. Gilbert Seashore, coroner of Hennepin County (Minneapolis) has been filed with the Governor. Dr. Seashore has long been regarded as an efficient and reliable officer.

Dr. Max Seham, of Minneapolis, who specializes in pediatrics and has studied children from a somewhat new point of view, is the author of "The Tired Child," a book just issued by the Macmillan Company of New York.

Dr. G. C. Thomson, a Fellow in the Rockefeller Foundation who has been in The Mayo Foundation for six months, has gone to Johns Hopkins, where he will continue his fellowship in the Rockefeller Foundation.

The tenth annual report of the Naeve Hospital, conducted by the City and County Association at Albert Lea, showed that 1709 patients were treated last year as against 790 in 1917. The hospital idea evidently is growing in Albert Lea, as elsewhere.

The Willmar Hospital has issued a neat pamphlet announcing the occupancy of the new addition to their building, which brings the capacity of the hospital up to 50 beds. The hospital was founded in 1907 and the new addition marks a growth of twenty years.

Dr. Louis Otto Kunkel, of the Boyce Thompson Institute for Plant Research, Yonkers, New York, gave the first Mayo Foundation lecture in a series on plant pathology and physiology in relation to man, in Rochester, January 14. His subject was "Filtrable Viruses."

Dr. Ray A. Kelly, of Mitchell, S. D., was elected president of the Sioux Valley Eye, Ear, Nose, and Throat Academy at its annual meeting at Sioux City, Iowa, last week; Dr. S. R. Gifford, of Omaha, Neb., was elected vice-president; and Dr. F. H. Roost was elected secretary-treasurer.

The Grand Forks (N. D.) Medical Society held its annual meeting last week and elected

officers for the current year as follows: President, Dr. J. E. Hetherington; Vice-president, Dr. H. M. Banks; Secretary, Dr. H. D. Benwell; Treasurer, Dr. H. W. F. Law. Dr. H. G. Woutat gave a talk on the "X-ray of the Gall-bladder."

Dr. William Bailey, who has been first assistant physician in the Topeming State Tuberculosis Sanatorium, has been appointed superintendent of the Newport (R. I.) Tuberculosis Hospital. Dr. Bailey had been associated with Dr. J. A. Myers in tuberculosis work in the Minneapolis General Hospital before going to Topeming.

Dr. Bertolet P. Rosenberry, of Winona, died on January 18, at the age of 45. Dr. Rosenberry was a graduate of the University of Michigan, class of '04, and had practiced in Winona for fifteen years. He served as major in the Medical Corps in the World War, and was a member of the Winona Clinic at the time of his death.

The new Nurses' Home of St. Alexius Hospital of Bismarck, N. D., was opened by a public reception last week. The new building is a handsome four-story structure, equipped in part as a hospital and in part as a nurses' home. It adds thirty-five beds for hospital use. Its cost is said to have exceeded \$150,000. It is thoroughly modern.

The regular monthly meeting of the Minneapolis Surgical Society will be held at the University Hospital at 8:00 P. M., on Thursday, February 3. The meeting will consist of a presentation of cases from the University Hospital and Cancer Institute. A fine program has been arranged by the Staff and all physicians are cordially invited.

Dr. Alvah J. Stowe, of Minneapolis, died on January 14, at the age of 65. Dr. Stowe was a graduate of New York University Medical College, class of '87, and had practiced in Minnesota for thirty years, in Minneapolis and at Rush City. He retired from practice on account of ill health last year. He practiced in Rush City over twenty years.

The Executive Council of the Association of American Medical Colleges has ordered that the Medical Department of the Graduate School of the University of Minnesota (including The Mayo Foundation) be admitted to membership in the Association of American Medical Colleges, following a detailed inspection made recently



by Dr. Fred G. Zapffe, Secretary of the Association.

The following ten physicians were granted licenses to practice medicine in North Dakota by the State Board of Medical Examiners at the January examinations: Sigga Christianson Houston, Watford City; Willard B. Pierce, Bismarck; Henry Mowat Waldren, Drayton; James Gordon Wells, Flaxton; John D. Graham, Starkweather; Jacob H. Fjelde, Fargo; Brestislav Sedlacek, Oberon; Frank J. Cornelius, Bowman; John P. Harkins, Fargo; and Ralph Edgar Pray, Valley City.

The Council of the Minnesota State Medical Association has authorized Dr. W. F. Braasch, president of the Association, to call a conference of local secretaries as guests of the State Association at the Saint Francis Hotel, Saint Paul, Tuesday, February 8, 1927. This conference will start promptly at 9 o'clock, and is for the purpose of discussing problems of interest to the local secretaries as they pertain to the profession. It is of the utmost importance that all the secretaries be present at this conference. If circumstances are such that it is impossible for the secretary to be present, then the president of the society should attend.

#### Stutsman County (N. D.) Medical Society

has twenty-one members in good standing, which comprises all of the medical profession in that district. The last meeting of the Society was held on January 31, at the Trinity Hospital, where a dinner was served through the courtesy of Mother Salome.

Dr. Whittemore, of Bismarck, and other speakers were on the program.

#### Cass County (N. D.) Medical Society

The Cass County (N. D.) Medical Society met at the Commercial Club on Wednesday, December 26, 1927. Dinner was served at 6:30 P. M., followed by a business and scientific program.

Dr. Sverre Oftedal, of Fargo, presented a paper, illustrated by lantern slides, on "Kidney Infections."

—T. H. LEWIS, M.D.

Secretary-Treasurer

#### The Thirteenth District Medical Society of South Dakota

The Society met at Milbank, on January 18, for its annual meeting.

Dr. P. D. Peabody, of Webster, presented a paper on "Retrodysplacement of the Uterus"; and Dr. F. N. Cliff, of Milbank, presented a paper on "Typhoid Fever and the Difficulty of the Source of Infection."

Officers for 1927 were elected as follows: President, Dr. E. O. Church, Revillo; Vice-president, Dr. A. P. Hawkins, Waubay; Secretary-treasurer, Dr. Charles Flett, Milbank; Censor, Dr. A. L. Severide, Webster; Delegate, Dr. G. W. Lowthian, Milbank.

#### The Tri-County Medical Society

The Tri-County Medical Society of North Dakota, held its annual meeting at Carrington, on December 28. The following officers were elected for the ensuing year:

President, Dr. H. A. Owenson, Grace City; vice-president, Dr. R. J. Critchfield, Fessenden; secretary-treasurer, Dr. H. Van de Erve, Carrington; delegate, Dr. E. L. Goss, Carrington; alternate, Dr. R. J. Critchfield.

Dr. J. Crawford gave a brief and very instructive talk on "Osteomyelitis," with a report on some cases of this disease seen by him in practice.

—H. VAN DE ERVE, M.D.

Secretary

#### North Dakota Medical Association

The dates of the North Dakota Medical Association meeting for 1927 have been fixed as that of June 1 and 2. The tentative program includes a symposium on stomach diseases and an exhibit from the Mayo Clinic, which exhibit was used at the last A. M. A. meeting. Dr. Steindler has a paper on "Arthropathies on Charcot Joints." Dr. Cole will give a practical demonstration of applying splints to fractures. There will also be a timely clinic on trachoma and a symposium on goiter. The meeting promises to be one of the best in the history of the Association.

—J. G. LAMONT, M.D.

Secretary

#### The West Central Medical Society of Minnesota

The West Central Medical Society held its annual meeting at Graceville, December 11, 1926. The members of the Society and their ladies were the guests of Dr. Oliver at a sumptuous dinner.

The following officers were elected for the coming year:

President, Dr. C. F. Ewing, Wheaton; Vice-president, Dr. Charles Bolsta, Ortonville; Secretary-treasurer, Dr. Herman Linde, Cyrus; Delegate, Dr. Charles Bolsta, Ortonville. Alternate to be appointed by Dr. Bolsta. Censors, Dr. E. A. Eberlin, Glenwood; and Dr. H. J. Shelver, Ortonville.

Dr. J. M. Arnson of Graceville presented a very interesting case of duodenal carcinoma and ascites.

The next meeting will be held at Wheaton, February 19, 1927.

—H. LINDE, M.D.

Secretary

#### Sioux Valley Medical Association

The winter meeting of the Sioux Valley Medical Association was held at Sioux City, Iowa, and the program, as presented in the last issue of the JOURNAL-LANCET, was one of the best ever held by the Association. The clinics, which were under the direction of Dr. J. H. Henkin, of Sioux City, were supplied with the best selection of cases ever presented before our society.

There were no visible weak points in the entire program, and the impression on the members was the biggest and best meeting of any in the history of the Association. The attendance, I know, was the largest both in reference to registration and general attendance.

The banquet, likewise, was largely attended. The speaking and toasts were well received, and the entertainment very pleasing.

While it is difficult for us to improve on this year's program, our aim will be even higher next year, if this is possible, because we realize the potentialities in making the Sioux Valley Medical Society stand out as a potent factor in clinical medicine in this district.

—R. F. BELLAIRE, M.D.  
Secretary

#### Office Space in Minneapolis for Rent

Space in a very fine suite in a first-class building, is offered to physician or dentist. Address 317, care of this office.

#### Wanted

To correspond with a man who has received the M. S. degree in surgery at the Mayo Clinic. Can offer possibly the best proposition in the Northwest. Address 318, care of this office.

#### Location Wanted by Physician

A recent graduate desires a desirable location in the Northwest. Graduate of the Medical School of the U. of M. Address 308, care of this office.

#### Physician Wanted

To locate in a town of 600 with large mixed farming community in Northeast South Dakota. No competition. Address 309, care of this office.

#### X-Ray and Laboratory Technician Wants Position

Have had three years experience as x-ray technician and routine clinical laboratory work. Will take position in hospital or office. Address 312, care of this office.

#### Position Wanted in Physician's Office

By a young woman who has had one year's training in a hospital and some office work. References as to character and ability. Address 310, care of this office.

#### Laboratory Technician Wants Work

Has had three years experience in large hospital. Can do both x-ray and general laboratory work. High-grade references. Address 305, care of this office.

#### Office Space for Rent

Space in down-town Minneapolis office for rent, March 1. Four doctors, a dentist, x-ray technician, and stenographer in office. Address 319, care of this office.

#### Physician Wanted in German Community

Population 1,000. One other physician. Practice paid \$8,000 last year. Can be increased by surgery. Minnesota town. Neighboring physicians 5, 11, 10, and 17 miles distant. Collections good. Address 320, care of this office.

#### Laboratory Technician Wants Whole or Half-time Work

A graduate of the Ancker Hospital (St. Paul) laboratory with four years experience desires work in or outside of the Twin Cities. Can do all kinds of laboratory work, and can make herself useful in hospital, clinic, or office. Best of references furnished. Address 302, care of this office.

#### For Sale

An unappraised, well-equipped modern drug store. Sales \$12,000. Stock and fixtures worth about \$7,000. Good proposition and opening for a physician. Address 314, care of this office.

#### Laboratory Technician Wants Work

Is graduate of city hospital course in x-ray and general laboratory work. Can keep books, do typing, and has worked seven years in railroad office. Address 304, care of this office.

#### Obstetrician Wanted

A pediatrician with a large and well-established practice wants an associate in an Iowa city, well qualified, to devote his whole time to obstetrics. Nothing to buy. Address 311, care of this office.

#### Position Wanted

By a graduate nurse in office of a doctor or dentist, or will consider taking charge of a private hospital. Experienced in all branches of nursing, including giving anesthetics. Address 316, care of this office.

#### Technician and Registered Nurse Wants Light Work

A woman, aged 34, who can take care of the laboratory work in a small hospital or physician's office and assist with the nursing will accept a small salary in a desirable position. Address 306, care of this office.

#### Converter for Sale

A 1-horse power motor converter used to convert 110 d.c. to 111 a.c. Has been used for a diathermy apparatus only about one year and is in good condition. Cost \$125; will sell for \$75. Address 315, care of this office.

#### Laboratory Technician Wants Work

Experienced laboratory technician desires position in Twin Cities or vicinity. Capable of doing blood counts, urinalysis, Wassermann, tissue staining, blood chemistry, and bacteriology. Also x-ray. Address 300, care of this office.

#### Office Furniture and Lease for Sale

In excellent location at a transfer point in Minneapolis, over a drug-store. I am compelled by sickness to leave the city. Office rent, \$35. Will sell furniture, etc., for \$350. New man will pick up some practice at once. Address 303, care of this office.

#### High-grade Technician Wants Position

Can take care of the laboratory and x-ray work in a clinic or small hospital or take charge of either department in a large hospital. Has had nearly two years country and city experience. Address 307, care of this office.

#### Hospital and Practice for Sale

In north central Minnesota. A six-bed, fully equipped hospital; established 16 years. Scandinavian community. No competition in town. Nearest competition 10 miles. Large territory in a fine dairy country. Fine roads. State high school. Did \$12,000 business in 1926, and collected \$10,000. Requires \$5,000 cash to handle the deal. Terms on balance of \$7,000. Building alone worth the price. Owner is retiring. Address 313, care of this office.



# THE JOURNAL-LANCET

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## THE MEDICAL PROFESSION\*

BY FREDERICK A. ERB, M.D.

MINNEAPOLIS, MINNESOTA

After much deliberation I decided, in my address to-night, to discuss the medical profession as I see it.

I know very well that the proper procedure, in delivering a presidential address, is to pat the medical profession on the back, mention all the wonderful advances that have been made in the realms of medicine and surgery, that life has been prolonged, that the *x*-ray, radium, and insulin have been discovered, infant mortality reduced, etc. But even though this is the proper thing to do, I am going to do the improper thing and call your attention to a few matters in which I believe the medical profession has fallen down and is still falling.

It is not necessary for me to tell you that the medical man of to-day does not command the same respect that was accorded to him even twenty-five or thirty years ago. You all know that this is true. The doctor used to be considered the big man in the community. It was an event when he entered the home. He was consulted on all matters and was considered a wise and capable adviser. This has all changed. He is not looked up to in the same manner. His judgment in most matters is not worth considering. I believe there are reasons for this change, and I shall try to point out a few of them.

First, education of the public along medical lines.

In spite of the old adage that "a little knowledge is a dangerous thing," the medical profession is doing everything in its power to spread this dangerous thing. We all know how unsatisfactory it is to treat a doctor or a nurse. They are the worst type of patients we come in contact with. They think they know something about medicine and about themselves. They question every form of treatment given them and think they know more about their condition than the doctor in charge. By our campaign of education we are making of laymen, both men and women, the same kind of patient, only worse. But what we really are doing is destroying their confidence in the doctor. How many patients of the old type have any of you left; the kind who will submit to an operation, for instance, without question or argument; who will tell you that the case is entirely in your hands, and that they will abide by your judgment. I know there are a few left, but very few. Now, it is more apt to be "Doctor, I have every confidence in you, but I have just read an article stating that an operation is not always successful in this condition, that radium or *x*-ray should be tried, or the rest cure, or the milk cure," or a hundred and one other cures. Some even go so far as to tell you what they need and what you had better do. I believe this educational propaganda is a mistake.

Any of you who have had sickness in your own families know how you would like to be

\*President's Address, presented before the Hennepin County Medical Society at the annual meeting, January 3, 1927.

able to call in a doctor in whom you have absolute confidence and turn the whole matter over to him with a feeling that now that you have called the doctor all will be well. But you cannot do it; you know too much about the condition yourself; you immediately think of all the complications that might develop; you do a lot of unnecessary worrying. You simply cannot relax and feel at ease because you have not the faith or confidence in any doctor. Neither has your modern patient who has a smattering of medical knowledge; and the doctor, feeling this lack of confidence and the critical attitude of his patient, many times cannot do his best.

Another matter in which the medical profession has not been alert is in relation to social agencies, welfare organizations, hospitals, etc. Nearly every social agency all over the country has been started and is managed by laymen. In all the welfare work, everybody is paid for his services but the doctor. The doctor makes it possible for these organizations to function; they could not exist without him, and yet he has little or nothing to say about their management and apparently is tolerated only because they can not get along without him. This is nobody's fault but our own. We wait until these agencies get a good start and do a tremendous amount of work, then we complain. The medical profession should wake up and, instead of following any lay leader that comes along, should take the lead and if anything is to be started in the way of preventive medicine, diagnosis, or treatment, medical men should start it and keep control.

Social agencies covering everything from birth-control to the care of the aged are over-running the country, but in very few have the medical men taken the initiative.

The same thing applies to our hospitals. They are managed by lay boards who dictate to the doctors. Years ago a hospital staff meant something. To-day we cannot even elect our staff officers without the sanction of the lay board; and yet there is not a hospital in this or any other city that could operate at all if the doctors did not patronize it. If any of you still labor under the delusion that you have anything to say about a hospital, try making a complaint about the food, charges for dressings, operating-room fees, or anything else, and see where you get off.

This lack of consideration for the doctor has been coming on gradually and is getting worse for no other reason than that the medical profession takes meekly what is handed to it and

has not the courage to call its soul its own.

We all know that the various cults, from Christian Science up and down, are apparently flourishing. When one has run its course another takes its place. For this I largely blame the medical profession. If we were actually giving our patients full value for their money, I do not believe the public would be so prone to run to every one and any one who calls himself a healer. You know that most of the gentry practicing the healing art outside of the regular medical profession charge nothing for a consultation or a diagnosis. I will admit it is not worth anything; nevertheless it is a talking point and attracts many a patient. We, on the other hand, charge a fee—and some of us a good stiff fee—for a consultation. Then we try to make a diagnosis. We advise x-ray examinations, fluoroscopic examinations, stomach analyses, blood chemistry, metabolic rate, etc., each one of these meaning a specialist with a goodly number of dollars attached. In due time the patient is told what we think is the matter with him. Sometimes we have to tell him that we do not know what is the matter with him; that he will have to have an exploratory operation. In the meantime the patient is about broke, and nothing has as yet been done to relieve his suffering.

An incident happened in our office a number of years ago. A man came in with an inoperable cancer of the rectum. The doctor examining him told him what the trouble was, that he could not be cured, and advised him to go back to the farm. No charge was made. He went from our office to a well-known clinic. Here he was examined from head to foot, for which he paid \$40.00, and was finally given the same advice. This happened to be a case in which any doctor with a finger and a brain could have made a diagnosis in two minutes. I do not blame the man for getting further advice; it was a serious situation; but I do blame the doctor for making a long-winded, expensive examination when it was absolutely unnecessary to do so and when he knew he could do nothing for his patient.

Another case came to my attention. The wife of a laboring man over seventy years of age had diabetes for several years. Some friends of hers persuaded her to see a certain doctor who has a very good reputation and is a very capable man. She did so; had a wonderful history taken; was told to come back, which she did five times. She was given advice about diet, which she already knew, and finally received a bill for \$50.00. Her husband, who earns \$5.00



a day, could not account for the size of the bill and thought there must be some mistake. He called up the doctor's office and was told by the secretary that the bill was all right, but that he must remember that the doctor was a specialist and therefore comes high. The bill was paid, but everybody these people come in contact with, knows about it. The patient received no benefit. She would have been helped just as much by an absent treatment and for considerably less money. Again we can not blame the patient, who naturally is worried about her condition and wants to see a good doctor. But to my mind the good doctor is not justified in robbing her. In this case he didn't even have to make a diagnosis; it was already made. He could have told her all there was to tell in one visit, knowing very well how much, or rather how little, he could do for her.

These are just samples of many unnecessary things done by some medical men just for the sake of an additional fee. It may be good business—there is money in it, but it does not set well with the public and certainly does not increase the esteem, respect, or kindly feeling toward the medical profession, and is one of the reasons why the cults continue to flourish.

Another matter occurs to me in which the medical profession has been negligent. I refer to physical treatment (physiotherapy). The medical profession has always considered itself far too superior to give any consideration to the various forms of physical treatment until very recently. Only since the recent war has a real effort been made to try it out. It has always been known that there was virtue in heat applied in various ways, in massage and in electricity, but we have used these measures in a haphazard way and failed to take any of them seriously. We have waited until the army of quacks has exploited these various forms of treatment and even have established recognized schools before we began to realize that there might be some good in them. When we have had an intelligent patient who has had a lame back or arm or leg for several weeks or months and we have tried in every way to relieve him and failed, it is rather disconcerting to meet him on the street with a smile on his face, and have him tell us that he finally tried an osteopath and after three or four treatments was cured. This happens to all of us occasionally, and you can not blame your patient if he thinks the osteopath knows something. So would we under similar circumstances.

You hear much in the medical profession

about research work, and thousands of dollars are spent annually for research laboratories; but the one research laboratory that we should have had years ago does not exist; that is, a laboratory where the medical profession could be put under the microscope, be *x*-rayed and fluoroscoped to find out what is the matter with it. Such a laboratory, manned by experts who have a few practical ideas in their heads in addition to their knowledge of medicine and surgery, is badly needed. Right now a laboratory of this kind is needed more than ever before. Whether we like it or not, there seems to be no question but that some sort of state or municipal medicine is coming. If you doubt this, make a tour of investigation; call on the big industrial plants, the Street Railway Company, the University Hospital, the General Hospital, etc., and find out how many doctors are working on a salary, generally a small one; find out how many employees and their families are receiving medical treatment free or for a very small monthly consideration; and, I think, you will agree with me that if this keeps on for another twenty-five years we will find the bulk of the medical men in a class with school-teachers and government clerks, working on salaries and taking orders from whoever employs them. Maybe this is a good thing, and we probably cannot stop it, but we can at least attempt to guide it along tolerant lines.

Every large, successful commercial enterprise employs an efficiency expert whose business it is to check up all departments to see that they are all working up to the limit, that there is no waste of time or money, and if one is not up to the standard the expert finds out what the trouble is and corrects it. It seems to me that the medical profession is in need of something on this order. Call it a research board, or investigating bureau, or anything you please; such a board should be established by the A. M. A. because these problems exist all over the country. Every state and county society should have such a board working in conjunction with the central board of the A. M. A. It should be the duty of this body of men to keep informed on everything pertaining to the practice of medicine; investigate every form of healing that may come up, rather than simply ignore it offhand. If anything of value is found it should be given to the medical profession and if it is of no value we should endeavor in every way to stop it. If any welfare or charity organization, requiring the service of medical men, is to be started it should be passed on by the local boards and the

central board and if it is not approved no doctor should be allowed to work for it if he wishes to retain his membership in the local society, and the A. M. A. The question of contract work, fee-splitting, advertising, and many other matters could be taken up by such a board.

I know this is but an idle dream; just the same it could be done and much good would result, if—and here I come to the real stumbling-block, the greatest weakness of the medical profession—if we medical men could ever get it through our heads that we must co-operate and pull together if we ever hope to accomplish anything, our petty quarrels and squabbles should be forgotten in working for the common good. When we try to get a hearing in the legislature or the press we are always confronted with the statement that the medical men do not know their own minds; one group will want one thing and another will want something entirely different, until it has come to the point where they do not pay any attention to what any of us want. The newspapers have no respect for the medical profession. If they get a story discrediting the medical profession they love to rub it in.

We have all many times found fault with unions; we may not approve of their methods; they have gone to the extreme in many instances, but we must admit that the unions have done for the working class what nothing else on earth could have done for them.

I do not mean to say that we should necessarily form a union, but I do believe that the

medical profession should appreciate the value of co-operation and should unite in some manner.

We could well afford to have two or three meetings a year devoted exclusively to the practice of medicine from a business point of view, to discuss the problems of free clinics, fees to be charged and how they can be collected, legislation, how we could best discredit the cults by rendering service that would stand out so clearly that even the most ignorant would appreciate it, and many other things.

We may say what we please about the practice of medicine not being a business, but, unfortunately, most of us have to make a living out of it just the same. We could also take enough interest in our livelihood to attend such meetings and, whether or not we personally agree with every policy that may be adopted by the majority, we could at least, as far as the public is concerned, put up a solid front.

I have only touched on what appears to me to be some of the weaknesses of the medical profession. There are many others. I know that many of you have thought along these same lines, but mere thinking will accomplish nothing. We need concerted action, and we need it now.

Shall we remain entirely indifferent to the fate of our profession; let it become entirely commercialized, and controlled by politics; or shall we fight to maintain the old ideals and standards that have always been associated with our profession in the past. I believe it is altogether up to us.

## THE SELLA TURCICA IN RELATION TO ENDOCRINOLOGY\*

BY MAXIMILLAN KERN, M.D.

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A clinical study of what appear radiographically as abnormal sellæ turcicæ, is possible only when one is aware of the strongly empirical character of his deductions.

Endocrinology to-day is approached from two different angles. The research worker is exacting in his demand that nothing can be of scientific use unless its extract can be produced synthetically, but the clinician justifies the employment of any and all endocrine measures at

our command. We readily see in endocrinology a repetition of our experiences in medicine. Quinine in malaria and mercury in lues, to cite two examples, were used for a long time empirically before they acquired acceptance in scientific medicine, and the same applies to certain endocrine therapy. It will be recalled that thyroid extract had been used long before we knew anything of thyroxin, and pancreatic extract was employed for many years until it was replaced by the more rational insulin. These examples, I believe, justify us in rejecting no remedy or method until it is proved useless by actual clinical experience.

\*Informal clinic presented before the Forty-fifth Annual Meeting of the South Dakota State Medical Association at Aberdeen, S. D., May 20, 1926.

Twenty-eight slides of abnormal sellæ turcicæ were shown at this clinic, but in view of their great similarity, as well as for lack of space, the author will omit them from this report.



Coming to our particular subject, it will be recalled that several years ago Timme showed that the size and shape of the sella turcica has a direct relation to the mentality of the patient, and that certain forms of epilepsy are due to pathology in the sella.

In order to approach scientifically the question of the relation of abnormal sellæ to endocrine diseases, it is essential to be agreed on what constitutes a normal sella. At present we are at a loss, because variable measurements have been presented by different workers, leaving room for dispute as to which of them represent the normal. It would appear that there is a varying standard for different individuals, so that a sella which is absolutely normal in one individual may be abnormal in another human being. Accordingly we can arrive at something like an estimate of the normal and abnormal only by comparison, provided our observations extend over a group of patients showing more or less uniform changes. Let us now glance at the radiographs or outline of some sellæ turcicæ in connection with several clinical observations.

CASE 1.—This patient was referred to me several years ago. He was found to be suffering from toxic thyroiditis. He had been operated on elsewhere, returned home, and developed various delusions and hallucinations concerning his condition. He displayed symptoms of depressive psychosis and on one occasion ran several miles after a train in order to murder the conductor. This passed off after a few months, and he developed *grand mal* symptoms. Upon examination one finds the sella greatly enlarged, a deep shadow extending far beyond the anterior clinoid process, obliteration of the anterior clinoid, and a deep excavation of the floor. The appearance of the sella turcica plus the general habitus of the man, as well as the hemianopia suggested to me the probable existence of a tumor of the pituitary. This diagnosis was verified by an operation, when a gliomatous growth was found.

CASE 2.—In the radiograph of this patient one can clearly observe an obliteration of both the anterior and the posterior clinoid processes. This patient was suffering from epilepsy with *grand mal* attacks, which developed quite suddenly without any known cause and with nothing in the family history having any bearing on his symptoms.

CASE 3.—In contradistinction to Case 2, this patient is suffering from "idiopathic epilepsy," which at first came on in the form of passing phases gradually developing into *petit mal* and finally *grand mal* attacks. The radiograph of the sella reveals no changes in either the anterior or the posterior clinoid processes. While the sella is somewhat smaller than usual, compared to the neighboring structures, it could not be in any way classed as abnormal.

CASE 4.—This patient is the wife of a prominent surgeon, and she complains chiefly of migraine, which developed after an exploratory laparotomy some years ago for what was diagnosed as acute pelvic cellulitis and cystic ovaries. She was sub-

sequently sent to Battle Creek, where a diagnosis of diabetes was made. Upon examination I found that the patient's voice had changed in pitch. Her general habitus was altered, and a fairly typical picture of Froelich's syndrome was evident. I could not find any sugar in the urine, but did find a disturbed sugar metabolism. The sella turcica in this case shows that the measurements are entirely out of proportion, the line of distance between the anterior and posterior clinoids is almost one-third the length of what could be considered comparatively normal, and the outline is very indistinct. In this connection we recall Engelbach's statement to the effect that over-weight at birth indicates hypothyroidism, that over-weight in the juvenile indicates posterior hypopituitarism, and that over-weight at the post-adult age is usually gonadal in nature, although it may be due to hypopituitarism, hypothyroidism, hypogonadism, or a combination of two or three of the above deficiencies. Engelbach states that about 80 per cent of post-adult adiposity cases are due to pituitary dysfunction.

CASE 5.—This patient developed epilepsy about ten years ago, at the age of twenty-two, following a normal pregnancy, which terminated normally in every respect. There is no family history of epilepsy, but as far as she can remember all her maternal relatives had enlarged necks, and one sister had definite symptoms of hyperthyroidism. Most of the attacks in this case have come on during menstruation or immediately after. Within the last year the patient has had as many as three *grand mal* attacks daily and would remain in a *status epilepticus* for many days. A general examination of the patient revealed nothing abnormal excepting a spastic colon and an abnormal sella turcica. The sella appears greatly enlarged, the anterior clinoid is distinct, and signs of obliteration in the posterior clinoid process are present. The patient was advised to discontinue the use of luminal and the administration of pituitary extract was substituted. Her attacks became less frequent, and she is able to concentrate. Instead of *grand mal* attacks there is merely a noticeable presence of "passing phases."

CASE 6.—This patient shows nothing abnormal in his family history nor in his personal history, except frequent colds in the last few years. After returning from the army, where he served during the World War, he developed severe headaches and gastrointestinal symptoms, which led one surgeon to diagnose the case as a gastric ulcer, for which the patient was operated on. He suddenly noticed that his vision in one eye was diminished, and he finally lost sight completely in the one eye. The field of vision in the other eye became markedly contracted, and a temporal hemianopia developed. An infected ethmoid was suspected, and surgical drainage was established.

The appearance of the sella turcica in this case is interesting. It shows a shadow extending beyond the line of the anterior and posterior clinoids, a deep excavation into the floor of the sella extending to the anterior clinoid region. In passing, it will be interesting to note that pituitary extract was administered for several months, and the patient now has 20/20 vision in one eye, while an optic atrophy developed in the other. This case was reported in 1922 in *Clinical Medicine* and in the *Journal of Otolaryngology and Laryngology*.\*

## PRESENTATION OF PATIENTS

The following patients are presented through the courtesy of Dr. Wilhite, Superintendent of the South Dakota State School for Feeble-minded:

CASE 1.—DR. WILHITE: This little girl is six years old. She is an adopted child who has proven mentally deficient. We have no family history. She has been sent to school, but makes very little progress. The principal point in her case is that she seems very affectionate.

DR. KERN: This child shows no particular abnormalities except that her mentality is a little defective, and she is very emotional. These children usually go along fairly well until about the age of eight or ten, showing very little abnormality; then they develop enlargement of the breast, and fat on the abdomen and the gluteal region. These children show a great deal of emotion and affection, and are often developed hypersexually. Ordinarily we treat them with thyroid substance, but their mentality is not much improved. Because of the lack of response to thyroid medication we suspect another involvement. In these cases it is reasonable to believe that in addition to the mild thyroid insufficiency we are dealing with hyperactivity of the gonads. You can readily see that the picture in this case is very complete. This child has a mammary development which is that of a girl much older than she.

In summarizing this case, we find three distinct conditions: a toxicity, which may be due to a thyroid dysfunction, a gonadal dysfunction, and some pituitary dysfunction. We rarely deal with a monoglandular involvement or disturbance in a case of this type. We are usually dealing with multiple glands, and if we can decide which ones are affected we can do something for the patient.

I believe that in this case thyroid therapy alone would be of no value. There is seemingly a pituitary insufficiency, which should receive some attention. I think that injection of anterior lobe pituitary will bring about a great change in the child's condition.

Some scientists are now trying to discount the value of heredity, and the necessity of taking a history from that standpoint, but endocrinology contradicts this. We rarely see a case of glandular dystrophy where at least one parent was not similarly affected.

CASES 2 AND 3.—DR. WILHITE: This boy is eight years old and the girl is fourteen. They are brother and sister. The boy came to the School when he was six. He did not talk and was very quiet in every way. He was put in school, and since then has developed a little. He has learned to talk and do some school work. The mother was supposedly feeble-minded; the grandmother was insane; and one aunt and uncle on the father's side were insane. The father and mother have visited the children, and from their general appearance I believe are glandular cases themselves.

DR. KERN: The points of interest in these cases are found in the family history. Dr. Wilhite has seen their parents and suspects that they have some glandular disturbance. The two children are almost directly opposite. The boy is aware of his surroundings, he is sensitive, and his development,

while a little bit retarded, does not suggest anything particularly abnormal.

The girl is fourteen but stopped growing at the age of two, and has not developed further. In addition to that she shows no interest in her surroundings and her skin is entirely different in texture. She is easily pleased, drowsy, and sleeps most of the time.

If you look at the physical appearance of the two children you can see that there is practically nothing abnormal about the boy, with the exception of some under-nourishment and a mild form of rickets. In the case of the girl there is the general appearance of the typical cretin. Her eyes are set far apart, her nasal bridge is wide, and she looks anemic. You can see the distension of the abdomen, and the tongue protrudes. We do not find a dermatographia in this case. There is a distinctly hypothyroid condition. She does not show the slightest sign of gonadal development, and there are signs of pituitary hypoadactivity.

I would not class the boy as an endocrine case from any specific standpoint. The question of classifying endocrine patients into certain categories and classes is not yet settled, because we do not know the exact action of all of the endocrine glands. When we are dealing with a straight out-spoken hypoadactivity glandular opotherapy is of assistance. In hyperactivity the problem is more complex.

CASE 4.—DR. WILHITE: This patient is thirty-three. Her history is negative except that she is greatly retarded mentally. She was formerly a cretin but has passed through that stage and now presents a dwarfism because of hypo-pituitarism.

DR. KERN: This patient does not present the mental picture of the usual dwarf. There is a type where the physical characteristics of the body are affected and there is little change mentally. This woman illustrates the fact that certain glands compensate each other in due time, and the patient can develop either a glandular atrophy or an hypertrophy with a complete change in the appearance and general mentality of the patient.

I do not think that thyroid extract alone or in combination with other gland extracts would accomplish anything in this case.

CASE 5.—DR. Wilhite tells me that this boy is nineteen. His mentality is practically nil. The texture of the skin is interesting. This is a case of cretinism primarily. The best we can do in a case of this sort is to classify him. On account of the pigmentation of the skin I would say that he probably has a thyro-adrenal involvement. We say of these cases that they are quite small mentally and large physically. These patients are drowsy and sleepy, the skin is usually blotchy and red, they become angry quite easily and have it in for the world in general. This boy is angry now because I am talking about him. They show no particular interest in their surroundings, but carry resentment.

At his age I think thyroid therapy should do him some good. I think if we could have a basal metabolism reading and find out his rate it would be of value; I should say it would be minus 30 to 50, and in cases of this sort thyroid therapy is always indicated.

CASE 6.—DR. WILHITE: This boy is instructive. He is twenty-four years old and has a negative



family history. It is a very typical case of adiposogenitalia.

DR. KERN: These patients with Froelich's syndrome usually go along in a practically normal way until they are about ten years old. They then begin to gain weight, have little resistance, and are subject to all infections. At puberty pituitary dysfunction begins to assert itself, and they develop Froelich's syndrome and become feminine in appearance. He has the mammary development of a girl, and pads of fat on his hands, hips, and back. He tires easily, and his mentality is below normal. I believe that the basal metabolism would be low and that the patient would be helped by thyroid therapy, plus pituitary extract. He could probably take larger doses of thyroid extract if given several days apart.

CASE 7.—DR. WILHITE: This baby is two and a half years old. She was breast-fed for one year, and symptoms were first noticed at one year of age. She was put on thyroid extract, but improvement was very slow as a baby cannot take the prescribed dose. At present she is taking one grain daily. A larger dose completely destroys the appetite. Her father has a brother who is now twenty-five and does not talk.

DR. KERN: The mere fact that this child cannot tolerate large doses of thyroid shows that the thyroid gland plays a very small part. The child does not show an evidence of cretinism. Her nose is a little wide, and her eyes are staring and show some separation. It would be interesting to know in a case of this sort what would happen if we could control the blood-calcium rate. In many of these cases I think we are dealing with rickets. While this child cannot tolerate thyroid extract she could doubtless tolerate parathyroid in enormous doses. The trouble is that we do not have the parathyroid gland to give them. The druggists fill prescriptions for parathyroid, but very often there are only a few pounds of parathyroid in the whole country. They have solutions and other preparations in place

of it, but I do not know of what value they are. We can give cod liver oil and use the ultraviolet and actinic rays of the sun. Very frequently a patient can take cod liver oil and thyroid extract, but the calcium does not remain fixed in the blood. Many men have worked on the theory that the fixation of calcium can be accomplished by the actinic rays of the sun, or the ultraviolet.

I would put this child on thyroid extract for a short time and then use the ultraviolet lamp or the actinic rays of the sun.

CASE 8.—DR. WILHITE: This child is two years and one month old. The onset of the difficulty is said to have been about two years ago, when she was dropped from the bed. She had apparently been normal previously. Since that time she has cried much of the time and seems to be in pain. She perspires very freely, is unable to use either the upper or lower limbs, and is so constipated that we have to use enemas constantly.

DR. KERN: I must call your attention to this fact: in discussing endocrine cases we often get into trouble because a doctor discovers allied conditions. This would be as good a case for a pediatrician as for the internist or surgeon, or for the organotherapist. What injury this child sustained I do not know, but there is an absolute spasticity of the muscles of the arms, which indicates that the child is suffering from some form of tetany. I am suspicious that there are many other conditions present, but what they are I do not know. It is possible that a pediatrician could recognize some meningeal symptoms, but we find these severe conditions in cases of tetany.

The treatment I mentioned is highly indicated here. This child should have a high calcium diet, some form of calcium injected or else have it in the form of cod liver oil and be subjected to plenty of sunshine. A roentgenogram in this case shows nothing in the way of a fracture, but both sides of the sella turcica overlap, and it can be seen that there is an abnormality of the sella.

## CERTAIN PHASES OF MYOCARDIAL DISEASES\*

By W. C. NICHOLS, M.D.

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The title "Certain Phases of Myocardial Diseases" should cover a multitude of sins; however, I shall confine my remarks to the vascular aspects of two types of degenerative disease, and show some slides which may help to illustrate what I shall say.

White<sup>1</sup> in his excellent classification of heart disease, describes the two types which we shall use as a point of departure:

1. Arteriosclerotic heart disease.
2. Hypertensive heart disease.

White has said that arteriosclerotic heart disease is the commonest variety of all.

Fahr<sup>2</sup> has said that hypertension is the most constant and important factor in causing chronic heart muscle disease. He cites Bell to the effect that most of the cases of chronic heart muscle disease not associated with chronic valvular disease are associated with hypertension.

It is obvious that these two varieties have much in common, as both produce progressive degenerative change.

In the first instance, with primary sclerosis, we have a modified blood supply with consequent metabolic change in the muscle, while in the second instance we have a modified metabolism following a work hypertrophy, with a secondary vascular change.

\*Presented at the Annual Meeting of the Northern Minnesota Medical Association, held at Crookston, Minn., August 9 and 10, 1926.

Both varieties often terminate in a similar manner. The terminations which I wish to discuss are those manifestations which are attributable to coronary diseases.

Here we have two classes :

1. The anginal type failure of coronary sclerosis.
2. The acute coronary infarctions, due usually to thrombosis, on a basis of previous arteriosclerosis.

Now, just a word as to the coronary physiology; Wiggers<sup>3</sup> says that disturbance in coronary blood supply may be considered as of two kinds :

1. Those disturbances due to dynamic derangement of the coronary circulation, that is coronary sclerosis.

2. Those due to occlusion of vessels.

In both somewhat similar changes in circulation occur.

The quantity of blood passing through the heart is determined by several factors :

1. By the height of aortic pressure and the total resistance in the coronaries, that is, vasomotor tone, ventricular tonus, and intraventricular pressure.

2. By an exceedingly important mechanism resident in the heart itself. The heart modifies its circulation directly by compression of the intramural vessels, propelling blood through at a velocity which is directly proportional to the rate and amplitude of contraction.

This mechanism depends for its existence upon the elasticity of the coronary vessels, and when they become less elastic through disease the mechanism is inadequate.

Changes in arterial pressure and in heart rate are not met with a proper modification of coronary circulation in the degree dependent on this mechanism and a dynamic anemia results.

Now, then, if we think of these affairs in terms of blood supply we can think of pathology and pathological physiology as dependent on the localization of the most marked degenerative changes secondary to change in blood supply.

Two of the things which may occur as a result of modification in blood supply are the following :

1. Anginal type failure,  
Which means essentially a limitation of effort because of pain or distress.
2. Congestive type failure,  
The classical heart failure with which we are most familiar.

All anginas, to be sure, are not associated with arteriosclerosis, but most of them are. Thayer<sup>4</sup> says that typical angina is rare in the absence of cardiac disease. Therefore, for our purposes, it

seems reasonable to accept MacKenzie's explanation of pain as being an expression of myocardial exhaustion until the pain mechanism of the heart is more thoroughly worked out.

From the fact that congestive-type failure is a frequent termination of the anginal type, it seems to me that they are both often degrees of the same process, and that when the muscle becomes tired enough to lose its proper response to increased volume and initial tension we get congestive-type failure with findings dependent on degree of failure in response and whether it is limited to the left side of the heart or also involves the right side.

Quite often pain is merely a warning of narrowing of reserve, and often the complaint is really one of a dyspneic distress rather than a real pain, and the degree of embarrassment determines the clinical findings which shall be found.

In failure of the anginal type we must consider several varieties :

1. That functional form in which no pathology is manifest, the anginas about which argument exists as to cause, and those cases frankly associated with aortic disease.

2. The anginas associated with coronary sclerosis.

3. The painful heart attacks associated with acute coronary obstruction, usually on a thrombotic basis.

The first type we may dismiss from this discussion with a few words. They are diagnosed on history of pain associated with exertion or overeating, are more or less typical, and are often serious from the prognostic standpoint. They may show no evidence clinically or with an electrocardiograph of circulatory abnormality.

The second type are those due to interference with coronary circulation; arteriosclerosis will often have a history of discomfort for a long time preceding the attacks of real pain. They also frequently have a history of breathlessness on exertion, indicative of a reduced heart-reserve.

The character of the pain in these cases demands further consideration.

Typically the pain is retrosternal with commonest radiation into the left arm or shoulder, but often with other radiations. It comes on following exertion or with exertion and a full stomach, and varies in severity from a dull ache to most excruciating pain. The patient often stands perfectly still, perhaps scarcely breathes until it is over. Apprehension may or may not be present.

Atypically, however, the pain is quite different



in character, and these are the cases which must be scrutinized so carefully.

Wearn<sup>5</sup> has called attention to the great frequency of gastro-intestinal symptoms in these cases. Thirty out of forty of his cases gave a history of trouble first referred to the gastro-intestinal tract.

Indigestion, gas, nausea and vomiting and pain are the first complaints. Epigastric pain is frequent, often severe, often confusing, and is frequently first attributed to stomach or gall-bladder. The frequent association of these symptoms with exertion is an important feature.

Slight dyspnea on exertion is common, and associated with the dyspnea occasionally one finds afternoon cough and early physical and mental fatigue.

Another pain substitute in coronary disease is the occurrence of attacks of nocturnal dyspnea. These are quite as characteristic as the occurrence of real pain and are extremely distressing. The patient may wake up breathless, terrified, and in a cold sweat; and then after sitting up for a while the attack passes off. I believe that MacKenzie has explained these attacks on the basis of a cardiac anemia during sleep.

Physical signs in this condition are notoriously untrustworthy because they are absent so frequently in serious cases. It is the symptoms the patient complains of which count the most. In fact Pardee<sup>6</sup> described a definite percentage of cases with neither physical signs nor electrocardiographic evidence of damage, when diagnosis of coronary disease was practically certain.

Signs should be looked for, however. Wearn<sup>5</sup> stresses the importance of finding a reduction in the intensity of the heart sounds. This sign, however, would not so likely obtain in the coronary change secondary to hypertension.

Cardiac hypertrophy is common in the hypertension cases, but in the primary arteriosclerotic may or may not be present.

The pulse most often is regular. However, while it is very rare for angina to occur in a fibrillator, vascular damage may produce several of the other modifications in rhythm. The commonest one found is the occurrence of premature contractions. Their presence is merely incidental.

Murmurs, if present, are not distinctive. If only due to arteriosclerosis they are likely to be systolic in time and may vary from slight roughening in the aortic area to the definite and diffuse cardiosclerotic murmur of Neuhoff.

Other slight signs of heart failure may be

present, such as a few moist râles at the bases.

The electrocardiograph is of much help in the diagnosis and prognosis of cases of coronary sclerosis.

Willius<sup>7</sup> in a large number of cases has correlated clinical and pathological findings with the electric evidence and concludes that T-wave negativity is of extreme importance.

The third type, that of coronary infarction, is the class which I wish to discuss at greater length. I believe that many of the cases of heart pain which we see fit into this class.

I believe that this group ultimately will be shown to embrace an appreciable percentage of the cases, which now in the absence of sufficient evidence of pathological change are thought to be examples of coronary spasm.

Perhaps many of the individuals who have one attack of angina and then go along for years in comparative comfort may be examples of acute obstruction of a small vessel in the coronary circulation, with pathology so limited by the size of the vessel or the rapid development of collateral circulation that clinical and electrocardiographic evidence is not persistent.

Many cases are cited in the literature where post-mortem evidence of previous coronary obstruction is obtained without a history indicative of the acute insult, where death has been due, either to late further obstruction, heart rupture, or congestive-type failure.

During the past several years coronary infarction has become a well-defined clinical entity, which in typical cases makes a picture almost impossible to overlook.

With Gross' picture of the circulation in mind we can readily see the explanation for the several types of manifestation described some years ago by Herrick.<sup>8</sup>

1. Cases of instant death with no death struggle, heart and respiration stopping together.

2. Cases of death within a few minutes or hours.

3. Cases in which attack is similar to typical angina, but more enduring and severe.

4. Cases milder, but with similar symptoms in which the condition is not recognized, may come to autopsy later and show old infarct, perhaps due to the obliteration of a relatively large vessel.

A typical coronary infarction usually occurs suddenly, often in an individual who has had evidence of coronary disease for several years, but perhaps more often than one would think in a man apparently well until the disease occurs.

We perhaps have acquired the habit of think-

ing that this accident is only one of advancing years, but the literature shows an increasing number of cases in earlier life. Christian,<sup>9</sup> in a series of 71 cases, describes 5 between thirty and thirty-nine, and 11 cases between forty and forty-nine. However, he gives the maximum incidence as between fifty and sixty. Levine,<sup>10</sup> in a series of five cases with recovery described one at thirty-six, and two at forty-three, and there are many other cases cited at an early age.

The pain of onset is usually characteristic, abrupt, agonizing, alarming, and enduring, perhaps described as a piercing or boring pain; and it is without the usual response to nitrites or morphine. It is usually retrosternal and is perhaps referred similarly to an ordinary anginal attack, but is much more persistent. Frequently, however, the pain is below the diaphragm and is epigastric so often that with attendant symptoms it suggests a picture of an acute surgical abdomen. In fact many cases have been operated on on that basis, and one often sees in the papers accounts of prominent men having died from acute indigestion or ptomaine poisoning, with the suspicion arising that death was a heart affair.

Libman<sup>11</sup> noted "that if a patient gave a history of having had an attack that was diagnosed as ptomaine poisoning or gastritis, and afterwards had to stop walking because of pain in the chest, the patient most likely had thrombosis of a coronary artery."

The pain is accompanied by marked pallor and profuse sweating. Gastro-intestinal symptoms are common, and nausea and vomiting occur and may persist.

Respiration is shallow and rapid. In fact the dyspnea in this condition is often out of all proportion to any early findings and may overshadow the pain.

The usual findings are, first, a marked fall in blood pressure, which helps to distinguish the case from an ordinary anginal attack. Then there is usually a rise in pulse, which is another distinctive feature. Heart tones become muffled and distant. Associated with the fall in pressure wet râles soon develop in the bases and may become quite general, then being associated with the onset of a cyanosis which has been previously absent.

Very soon a leucocytosis develops, and, if there is any muscle necrosis, it may climb to twenty-five or thirty thousand. Libman has commented on the significance of the blood examination in these cases. With the leucocytosis the

temperature rises, and the following day may reach 104°.

Frequently, if the left ventricle is involved, a definite pericardial friction rub may be heard over the site of infarction. It is quite diagnostic if found, but many cases do not show it, however.

Wearn,<sup>12</sup> in a report of nineteen cases of coronary thrombosis, found the descending branch of the left coronary to be involved in sixteen.

Very characteristic electrocardiograph findings have been described in coronary infarction by F. M. Smith, H. E. B. Pardee, and J. B. Herrick.

Death may occur at once, in a few hours, or in a few days, or recovery may occur.

Fulton<sup>13</sup> describes three mechanisms of death:

1. An extracardiac death from the loosening and subsequent lodgement of an intracardiac thrombus, which has formed at the site of infarction.

2. Direct damage to heart, with either congestive failure or heart rupture.

3. An interference with the mechanism of beat, either a block or a ventricular fibrillation.

Now permit me to show you a few slides to illustrate what we have been over.

First a few illustrations from Gross<sup>14</sup> most excellent work on coronary circulation, to illustrate the rich coronary anastomosis and to indicate that to get an appreciable amount of muscle damage a vessel of considerable dimension must be involved. (Showing slides):

Fig. 4. Blood supply of average heart looking through from behind.

Fig. 5. Photo of injected and cleared specimen showing ultimate subendocardial distribution of coronary arteries.

Fig. 14. Photo of an injected and cleared specimen showing anastomosis on anterior surface of the heart.

Fig. 24. Photo of anterior surface of injected and cleared specimen of the fourth decade showing distribution of arteriæ telæ adiposæ.

Fig. 25. Photo of posterior surface of same heart.

Fig. 30. Roentgenogram of blood supply of average heart at birth and in the seventh decade, illustrating the marked evolutionary changes which advancing age periods have produced.

Gross has beautifully shown that anastomoses exist between the right and left coronary arteries, both in their capillary, as well as in their pre-capillary, distribution: that anastomoses exist be-



tween branches of each coronary: that anastomoses exist between coronaries and vessels from adjacent and attached organs: that anastomoses in the heart are universal and abundant.

It is obvious that with such a perfect anatomical distribution of blood to start with, coronary obstruction of diverse variety and degree is possible, and, consequently, clinical findings and symptoms are apt to be variable in variety and degree.

The next several slides illustrate the evolution of the electrocardiographic findings in a case which we believe to be an infarction.

F. F., male, aged 46, was seen June 3d, at 2 P. M. and gave the following history:

At ten A. M. felt a slight soreness in epigastrium, which soon passed off and was not severe. Again at noon while eating lunch this discomfort recurred and again passed off. Shortly after lunch pain came on again suddenly and was so intense he could hardly walk. He started to sweat profusely, and breathing became rapid and difficult. With each breath the pain seemed to become more intense, pain was limited to upper epigastrium and was not referred.

Since February, 1926, he has been having epigastric discomfort coming on every afternoon between 4 and 5 P. M., not severe, but persistent until he got home. He thought he was having indigestion.

When seen at 2 P. M. he was sitting in a chair apparently suffering intensely. Pallor was marked, face looked drawn, and sweat was pouring from his face and neck.

Pulse was small in volume and tension, blood pressure was 90 over 60, left edge of heart was apparently in nipple line, apex was not felt. No murmurs were heard, but heart tones were very indistinct. Rhythm was apparently normal except for an occasional premature contraction.

Wet râles were present over both bases. On the following day they were diffuse over whole chest and on the third day were only heard in the left base. The following day the white blood count was 27,000.

Pain persisted in spite of considerable morphine until the night of the second day, but there still was some pain on the fourth day. The blood pressure was 80 over 60 on the ninth day.

This man is now up and around and feels quite well when quiet. He constantly disobeys instructions, and when he is over active he feels epigastric distress.

The next slide, Mrs. L., is from a woman of 72, with the following history:

When she started to get up at about 8 A. M. she developed sudden severe epigastric pain followed by vomiting and breathlessness. When seen, at 10 A. M., she still was suffering severely, and she obtained very little rest all day with considerable morphine. The blood pressure was 120 over 60 (she had been a hypertensive for some time); there were a few râles in both bases. At 7:30 P. M., she entered the hospital, and this tracing was taken. She went into coma about 3 A. M. with an apparent right hemiplegia and died shortly with respiratory paralysis.

I believe she had a cerebral embolus following thrombus at the site of the infarction.

Her tracing shows the T wave coming from the "R" before it has reached the base line, and is very similar to some of the tracings Smith obtained in his experimental work on dogs immediately after the ligation.

The next slide, Mrs. H., is from a woman of 59 whose chief complaint is recurring epigastric pain, which comes on following exertion and lasts for a few minutes. About a month before being seen she had a severe attack of epigastric pain lasting several days and accompanied by vomiting, from which she dates all her trouble. Her distress when seen was anginal in type. We believe from the character of her "T" waves that she has coronary disease, whether it started with an infarction or not is not so certain.

The next slide, Mrs. J. H., is from a hypertensive woman of 69 whose chief complaint is severe attacks of substernal pain. I believe she has coronary disease.

The next G. B. is from a man of 52 who was decompensated when tracing was made. I believe his coronary damage, however, is on a little different basis, for he has apparently a specific aortitis.

Mrs. L., the next slide, is a woman of 50 who knows she has had hypertension for years, and whose only complaint is nocturnal dyspnea.

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## "FOR THE BETTER CHILD"

BY RICHARD OLDING BEARD, M.D.

Emeritus Professor of Physiology, University of Minnesota; Executive Secretary, Hennepin County Public Health Association; Secretary to the Northwest Conference on Child Health and Parent Education

The physician of the past was quite habitually known as the family advisor. It is a gracious term. It suggests a gracious service. To have fulfilled this friendly function, year in and year out, was a source of satisfaction to many a doctor of the old school. It remains the function still of a few.

But its exercise today is rare. In fact, a sense of unrest is to be discovered in the mind of the profession over the conditions of modern practice and it is traceable, in no small measure, to the conscious loss of this earlier relationship to the family clientele. The occasion for this lapse is, perhaps, not far to find.

The doctor has not preserved his extraprofessional relations to his people. He sees his patients only when they are sick. He has not kept in touch with their family needs. He is not far in advance of their growing intelligence in matters of human health. He has incurred the habit of thinking, too exclusively, in terms of human ills. He is preoccupied with the arduous practice of remedial medicine. He follows in the footsteps of medical science, as applied to disease, and proverbially "Science moves but slowly, slowly,—creeping on from point to point."

The medical profession, as a whole, is one of the most conservative of modern groups. It does not love change. It is wary of innovation—and doubtless its conservatism safeguards its public, always too prone, like the ancient Ephesians, to seek after some new thing.

But, in the meantime, the generations, past and present, have seen rapidly moving days. The American people are breathing a new social atmosphere. They are conquering the secrets of a new earth and a new heaven. They are served by a multitude of modern devices which have made the world a new place to work in and to play in,—if Americans ever really play at all. They are thinking new thoughts, forming new standards, talking a new language of plain terms applied to plain facts. They are building a new environment around themselves and their children. And there is the crux of the whole matter. The children are the key to the new situation.

These children are of essentially modern type. They are being born into a new world. Unnumbered influences, to their forefathers and moth-

ers all unknown, crowd in upon their avenues of special sense and play upon their receptive nerve centers. To these influences they react more quickly, more vividly, more forcefully, than did the children of old, and with responses more varied, with readier resultants in good or bad habits and behaviors, than their predecessors ever experienced. They present new problems to their parents, to their teachers—and these problems press upon the attention of society at large.

Many as are the derelictions with which the home and the family are charged,—the people in these homes are thinking,—vaguely, gropingly, perhaps,—but thinking for themselves. They are thinking, too, in terms of health, of human betterment, of better children; less in terms of mass, more in terms of quality. They are sensing the new dangers to which the children are subjected; the new difficulties of child development which parents must face and overcome. They are conscious of their own needs, of their abounding ignorance, of their lack of understanding of the nature of the child. They are beginning to recognize the truth that they themselves are, too often, mischief-makers for their children.

They realize, too, that the fund of traditional knowledge handed down by generation after generation of truly consecrated mothers is totally inadequate to the needs and conditions of today. They are looking for help.

And, here again, is the crux of the situation. They are not finding that help in the old family advisor. Save for the group of modern, well-informed pediatricists, who have caught the vision of this new day in child development and parental education,—the men of medicine of the present are purblind leaders of the blind in these novel ways.

Demand always and inevitably predicates speedy response in the matter of supply. What the people want they will get. If the supply does not come from one source, they will look for it at another. And it is coming!

Psychologists, psychiatrists, mental hygienists, sociologists, educationists, social service workers, public health nurses are filling in the gap of popular needs,—they are serving as the purveyors of the knowledge the people are eagerly seeking.



This is the meaning of the new movement for child study, for child development, for child health,—the health of the whole child,—its physical, mental and social health. This is the meaning of the new call for parent education.

And now to the obligation, at this juncture, of the profession of medicine. It has the scientific background for this task of parent education. It has the foundational facts of structural and functional integrity which underlie health habits. It commands the bacteriologic causes and the pathologic results which interpret health disturbance. It can come back into its own field of health promotion; not, indeed, to supplant the new forces which have invaded it, but to make alliance with them in the cause of human betterment, to be most safely and sanely assured by this union of forces.

It is the recognition of these things which inspires the calling of "The Northwest Conference on Child Health and Parent Education," to be held in Minneapolis on March 8, 9 and 10, as it has inspired the calling of similar and successful conferences elsewhere.

The unanimity with which large numbers of organizations are sponsoring this Northwest Conference is promise of its good results. The medical societies of the Twin Cities are among them. The County medical groups of Minnesota and surrounding states have been invited to its sessions.

It is a timely thing. It should be of inestimable value to the medical profession and to its natural clientele. The doctors will have the opportunity to go to school with the parents and teachers of the children at this Conference; to sit at the feet of those who are devoting their lives and their energies to the study of child life; to join forces with them in the effort we are all making "For the Better Child."

The Tentative Program of The Northwest Conference on Child Health and Parent Education follows:

#### PROGRAM

##### General Session, Tuesday Morning, March 8

9:15-12:00

##### THE DEVELOPMENT OF THE CHILD

*Chairman:* MRS. JOHN S. PILLSBURY, *Minneapolis*  
*Invocation:* THE REVEREND DR. JOHN E. BUSHNELL,  
*Westminster Presbyterian Church, Minneapolis*

1. The Characteristics of the Healthy Child.  
HENRY F. HELMHOLZ, B.S., M.D., *Professor of Pediatrics, Mayo Foundation for Medical Education and Research*

2. The Normal Growth of the Child.  
RICHARD E. SCAMMON, Ph.D., *Professor of Anatomy, University of Minnesota*
3. Posture in Relation to Growth and Development.  
ARMIN KLEIN, M.D., *Director, Posture Clinics, Massachusetts General Hospital, Boston*

##### Luncheon Round Table Conferences

12:15-2:00

1. The Development of the Child.  
*Chairman:* F. W. SCHLUTZ, B.A., M.D., *Chief of the Department of Pediatrics, University of Minnesota.*  
Discussion of Addresses of the Tuesday morning session, by:  
DR. O. W. ROWE, *Duluth*  
DR. N. O. PEARCE, *University of Minnesota*  
DR. FREDERICK C. RODDA, *University of Minnesota*  
DR. W. RAY SHANNON, *University of Minnesota, and others*
2. The Nutrition of the Child.  
*Chairman:* EDGAR J. HUENEKENS, B.A., M.D.,  
Some Problems of Child Nutrition.  
LYDIA J. ROBERTS, S.M., *Assistant Professor of Home Economics, University of Chicago*  
Discussion by:  
DR. WOODWARD L. COLBY, *University of Minnesota*  
DR. ALBERT M. BRANDT, *Bismarck, N. D., and others*  
DR. H. S. LIPPMAN, *University of Minnesota, and others.*

##### General Session, Tuesday Afternoon, March 8

2:30-4:30

*Chairman:* MRS. JOHN G. FRIEDMAN, *St. Paul.*

1. Work and Efficiency in School Children.  
MAX SEHAM, M.D., *University of Minnesota*
2. The Constitutional Make-Up of the Child.  
GEORGE DRAPER, M.D., *Columbia University*
3. The Health Habits of the Child.  
ARTHUR B. CHANDLER, M.D., *Medical Director, Nursery School Laboratory, McGill University, Montreal*

##### General Session, Tuesday Evening, March 8

8:00

MR. WILLIS K. NASH, *President of the Conference, Introducing, as Presiding Officer, THE HONORABLE EDWARD F. WAITE, Judge of the District Court, Hennepin County, Minnesota*

*Address:* The Parent and the School.

MRS. A. H. REEVE, *President, National Congress of Parent-Teacher Associations*

*Address:* Community Provision for a Child Health Program.

GRACE ABBOTT, *Chief, Children's Bureau, U. S. Department of Labor, Washington, D. C.*

##### General Session, Wednesday Morning, March 9

9:15-12:00

##### THE CHILD AT HOME

*Invocation:* THE RIGHT REVEREND JAMES P. CLEARY, *Church of the Incarnation, Minneapolis*

1. What the Mother May Learn Through Directed Observation of the Child.  
LOUISA C. WAGONER, Ph.D., *Professor of Child Study, Iowa State College*
2. Early Training and the Development of the Individual.  
JOHN E. ANDERSON, Ph.D., *Director, Institute of Child Welfare, University of Minnesota*

## 3. The Young Child and Its Parent.

BIRD T. BALDWIN, Ph.D., *Director, Child Welfare Research Station, University of Iowa*

**Luncheon Round Table Conferences**

12:15-2:00

## 1. Study Groups.

*Chairman:* MRS. A. A. MENDENHALL, *President, Minnesota Congress of Parent-Teacher Associations*  
The Value of Study Groups for Parents.

EDITH D. DIXON, B.S., *Assistant Professor and Extension Specialist, Institute of Child Welfare, University of Minnesota*

*Discussion by:*

MRS. ABBOTT FLETCHER, *Minneapolis College Women's Club*

MRS. THEODORE C. BLEGEN, *Minnesota Congress of Parent-Teacher Associations*

## 2. Social Hygiene.

*Chairman:* MRS. ROBBINS GILMAN, *Executive Secretary, Women's Co-operative Alliance, Minneapolis*  
Sex Education and the Young Child.

MRS. SIDONIE M. GRUENBERG, *Director of the Child Study Association of America, New York*

*Discussion by:*

MISS ALICE LEAHY, *Minneapolis Child Guidance Clinic, and others.*

**General Session, Wednesday Afternoon, March 9**

2:30-4:30

*Chairman:* MRS. DAVID PERCY JONES, *Minneapolis*

## 1. Problems of Childhood and Youth.

## 2. Discipline in the Home.

SMILEY BLANTON, M.D., *Director, Minneapolis Child Guidance Clinic, Professor-Elect of Child Study Vassar College*

## 3. The Adolescent Age.

BORDEN S. VEEDER, M.D., *Washington University, St. Louis*

**Evening Session, Wednesday, March 9**

6:30

**Banquet—Curtis Hotel**

MR. WILLIS K. NASH, *President of the Conference, Introducing as Presiding Officer* LOTUS DELTA COFFMAN, Ph.D., LL.D., *President, University of Minnesota*

*Introductory Address:* The Parent and the University.  
LOTUS DELTA COFFMAN, Ph.D., LL.D.

*Address:* Parental Responsibility for Child Development

**General Session, Thursday Morning, March 10**

9:15-12:00

**THE CHILD IN THE COMMUNITY**

*Chairman:* DR. JAMES T. CHRISTISON, *St. Paul*

*Invocation:* RABBI ALBERT G. MINDA, *Temple Israel, Minneapolis*

## 1. The Law and the Child.

WILLIAM HODSON, B.A., LL.B., *New York Council of Social Agencies*

## 2. Social Influences in the Life of the Child.

DR. FREDERICK M. ELIOT, *St. Paul*

## 3. The Community's Needs in the Health Service of the Child.

SAMUEL J. CRUMBINE, M.D., *General Secretary, American Child Health Association, New York*

**Luncheon Round Table Conferences**

12:15-2:00

## 1. Education for the Super-Normal.

*Chairman:* MR. W. F. WEBSTER, *Superintendent of Minneapolis Public Schools*  
The Exceptional Child.

MELVIN E. HAGGERTY, Ph.D., *Dean of the College of Education, University of Minnesota*

*Discussion by:*

L. J. BRUECKNER, Ph.D., *Associate Professor of Education, University of Minnesota*

## 2. The Handicapped Child.

*Chairman:* M. L. STIFFLER, M.D., *Director, St. Paul Child Guidance Clinic*

Physical Handicaps.

BORDEN S. VEEDER, M.D., *Washington University, St. Louis*

Mental Handicaps.

MRS. SMILEY BLANTON, *Minneapolis*

*Discussion by:*

MISS MAE BRYNE, *Minneapolis*

DR. JAMES T. CHRISTISON, *University of Minnesota*

DR. ROY ANDREWS, *Mankato*

DR. EDWARD D. ANDERSON, *University of Minnesota*

**General Session, Thursday Afternoon, March 10**

2:30-4:30

**THE CHILD IN SCHOOL**

*Chairman:* MRS. RUTH HAYNES CARPENTER, *Minneapolis*

## 1. Mental Hygiene in Schools and Colleges.

ARTHUR H. RUGGLES, M.D., *Director of Butler Hospital, Providence, Rhode Island*

## 2. What the Elementary School Can Do in Character Education.

GEORGINA LOMMEN, M.A., M.L., *Director of Teaching, State Teacher's College, Moorhead, Minnesota*

## 3. The Relation of the Home to the School in the Care and Training of Children, from the Third Year on Through the 'Teens.

M. V. O'SHEA, Ph.D., *Professor of Education, University of Wisconsin*

**ORGANIZATIONS SPONSORING THE CONFERENCE**

University of Minnesota

Minnesota State Federation of Women's Clubs

Minnesota League of Women Voters

Minnesota Congress of Parents and Teachers

Minnesota State Public Health Association

Division of Child Hygiene—State Department of Health

Children's Bureau, State Board of Control

Institute of Child Welfare—University of Minnesota

Minnesota State Hospital Association

Minnesota State Registered Nurses' Association

Fifth District Minnesota State Federation of Women's Clubs

Hennepin County Public Health Association

Hennepin County Medical Society

Ramsey County Medical Society

Hennepin County Tuberculosis Commission

Hennepin County Tuberculosis Association

Hennepin County Child Welfare Board

Minneapolis District Dental Society

Third District Minnesota Registered Nurses' Association

Minneapolis Civic and Commerce Association

St. Paul Association



Minneapolis Council of Churches  
 Minneapolis Council of Social Agencies  
 Minneapolis Division of Health  
 Infant Welfare Society  
 Visiting Nurses' Association  
 Women's Co-Operative Alliance  
 Women's Community Council  
 Council of Jewish Women  
 Minneapolis League of Catholic Women  
 Family Welfare Association  
 Woman's Welfare League  
 Children's Protective Society  
 St. Paul Baby Welfare Association  
 Minneapolis Parents' and Teachers' Association  
 St. Paul Council of Parents and Teachers  
 Minneapolis Parochial Parents' and Teachers' Association  
 Minneapolis Class-Room Teachers' Association  
 Minneapolis Teachers' League  
 College Women's Club

Junior League  
 Minneapolis Child Guidance Clinic  
 St. Paul Child Guidance Clinic  
 Minneapolis Rotary Club  
 Minneapolis Lions Club  
 Minneapolis Kiwanis Club  
 Minnesota Association for Crippled Children  
 Rosedale Cottage Association  
 Norwegian Lutheran Church of America

### TICKETS

Course tickets \$3.00, admitting holder to all general sessions of the conference.

Single session tickets, fifty cents.

Luncheon tickets, daily Round Tables, \$0.75.

Dinner ticket, Wednesday, March 9th, \$1.50.

Tickets and reservation may be made by addressing the Secretary of the Conference, 625 Sexton Building, Minneapolis.

## THE MEDICAL SCHOOL OF THE UNIVERSITY OF MINNESOTA

By E. P. LYON, Ph.D., M.D., DEAN

[*The Minnesota Alumni Weekly* is publishing a series of articles on "Know Your University," one of which is by Dean Lyon on the Medical School, and we gladly give it a place in our columns where it will probably be seen by some of the older alumni who are not in close touch with the present rank and work of the Medical School today.—The Editor.]

Our Medical School is a good school. Comparisons are invidious, but I suppose most informed people would class us in the first twelve or fifteen of the country. As there are eighty in all, ours may be said to be in a good position.

We should be more concerned with improving our school than in celebrating its successes or attempting to find its relative rank. I hope I shall be pardoned, therefore, if I combine some statement of our needs with description of our achievement and position.

The three things that make a school and make a school great are (a) the student body; (b) the faculty and (c) the provision of things to study and a place to study. This includes buildings, laboratories, equipment, libraries, hospitals.

Our student body is rather good. I am willing to compare it with any, not excepting those chosen on a degree basis alone. Our top men couldn't be beaten anywhere; but like all others, our group slants off to those who can barely make the grade. However, since we adopted the honor point system of admissions we have few absolute failures.

I think there is no gainsaying the fact that the average American student is less thoroughly drilled and less studious than his confrere in

Europe. But all our American professional schools have to meet this situation, which is rooted in our secondary school system. I will only say that we get a good group of students—mostly of reasonable ability and training, almost all earnest and interested.

I am not in favor of raising the requirements for admission—at any rate, the time requirements. But I am equally not in favor of lowering requirements. American medical schools have now reached somewhere near the world standard of admissions, and I am in favor of sticking to it.

Our faculty is good—in spots excellent, in other places only fair. That's inevitable. Among the science or fundamental departments we have two departments with a national reputation. The others are better than average. We have a real school of medical sciences. Our research output is good. No more significant work is being done anywhere than in our department of Bacteriology.

Our clinical departments have been too dependent upon teachers available among the practitioners of the Twin Cities, working on part time. It should be remembered that most of these men give their services gratis. We owe them much for this. We need these men, but we need something else. We have insufficient money to put into our clinical departments. We need more money and more full-time, paid men—men of the type who have prepared themselves for University careers as teachers and in-

investigators, in the fields of medicine and surgery, in the same way that professors of other University subjects prepare themselves, and men devoting themselves equally with the latter to scholarly pursuits. Of course we need the part-time practical men also.

We have made a beginning of full-time organization in Pediatrics and Medicine, but neither has the budget or clinical facilities sufficient for a big University clinic. We hope to do something with Surgery in the near future. Many interesting research projects in clinical lines are in progress. One or two, if successful, will have far-reaching importance.

Our laboratory buildings are modern and well equipped. They are overcrowded by the large classes we are now compelled to accommodate. Millard Hall and the Institute of Anatomy should get their missing wings.

Our hospital is inadequate in all departments. It should be built up to 600 beds as soon as

possible. The rejection by the City of Minneapolis of the offer of land for a new General Hospital near the Medical School is said to be imminent. I think this is a terrible and irreparable mistake, but there seems no way to avoid it. And this means from our side that we shall have to build a larger hospital of our own in order to do the most efficient and controlled type of teaching. Of course we shall continue to use the General Hospital for the kinds of teaching to which it lends itself.

We need a nurse's building, a psychiatric hospital, an outpatient building. All of these are in the comprehensive plan which went before the Rockefeller boards, and on the basis of which the General Education Board offered \$1,250,000 towards the \$3,600,000 program. With the withdrawal of the City, these estimates should be recast, the approval of the Rockefeller people to the changes should be sought and the whole thing carried forward as rapidly as possible.

## GENERAL PERITONITIS COMPLICATING SCARLET FEVER

By J. H. FJELDE, M.D., AND

J. O. THREADGOLD, M.D.

St. John's Hospital Fargo, N. D.

FARGO, NORTH DAKOTA

A case of this rare complication of scarlet fever, together with the findings at autopsy, was recently reported by Taylor.<sup>1</sup> That these patients very rarely recover is indicated by the single instance reported among the twelve cases of this condition to be found in the literature.<sup>2</sup> Since recovery is so very rare it is believed that the following case history will deserve a brief report:

L. K. A white girl, aged 3½ years, entered St. John's Hospital on October 7, 1926, with the diagnosis of general peritonitis. Six weeks prior to admission the child became suddenly ill with sore throat, fever, and vomiting. On the day following a typical scarlatinal rash had developed. The diagnosis of scarlet fever was made by the attending physician. The course of the disease was moderately severe; the rash disappeared on the sixth day; the temperature ranged above 100° F.; a mild acute nephritis developed on the tenth day.

No antitoxin or serum was administered. On the twelfth day the child complained of pain in the abdomen, vomited intermittently throughout the day, and on the day following showed defi-

nite distention and general spasticity of the abdominal muscles. Forty-eight hours later the acute condition had subsided and prostration was less severe, but the rigidity and distention remained unchanged. Intermittent vomiting continued with occasional variations in severity until the child entered the hospital, dehydration and emaciation progressing to the very extreme condition presented on admission.

Family and past history, essentially negative. Physical examination on admission showed an extremely emaciated and dehydrated female child of 3½ years. Skin dry, wrinkled, inelastic, and of a peculiar yellowish-grey pallor. The child looked like nothing so much as a "little old ape." She cried continuously with a pitifully weak, monotonous whine, pleading for food and water. She vomited everything taken within five or ten minutes. The abdomen was distended and tympanitic throughout, with marked tenderness over both right quadrants. The heart and lungs were clear. The urine showed 2 plus, albumin, and many hyalin casts. Blood picture: w.b.c., 22,200; r.b.c., 3,250,000; hb., 75. Temp., 98° F.; pulse, 100; respirations, 28.



The child was immediately given 400 c.c. of 5 per cent glucose intravenously, and 500 c.c. of intraperitoneal saline, followed four hours later by subcutaneous saline, 1,200 c.c. being given in the following six hours. The effect of these two liters of fluid was remarkable. The child became quiet, the skin moist and elastic, the sunken eyes assumed a more normal appearance, and she had the first restful sleep in many days. With dehydration overcome she was able to retain small quantities of milk and broth, and her condition rapidly improved. A transfusion of 200 c.c. of citrated blood was given the next day. On October 10 she developed an acute gastric retention, which persisted for forty-eight hours, when symptoms of intestinal obstruction suddenly flared up: projectile vomiting, visible peristalsis, marked distention, and rapidly developing prostration. The vomitus soon presented a strong fecal odor. At this time also slight amounts of stool were passed during the day, the stools consisting chiefly of an extremely foul, purulent material.

The abdomen was opened by Dr. Weible, who encountered an abscess immediately upon opening the peritoneum in the right lower quadrant. Another incision in the right upper quadrant disclosed another abscess, and finally through a small mid-line incision just below the umbilicus the obstruction was found, consisting of a mass of peritoneal adhesions binding down a loop of ileum in its midportion. The small intestines were loosely but wholly matted together, with, however, only the one constricting band to cause obstruction. An ileostomy was done, the abscesses drained, and the child returned to the nursery in fair condition. The pus evacuated from the abscesses was the characteristic thick, greenish pus of the green-producing streptococci, with its peculiar foul odor.

A transfusion of 200 c.c. of citrated blood was given the following day, and with constant at-

tention to fluids and nutrition the child began slowly to recover, the ileostomy functioning nicely. She gained one pound in ten days. Ultraviolet ray exposures, at the suggestion of Dr. F. Darrow, were started on October 28 with an astounding rise in the weight curve beginning definitely on the second day of the radiation. She gained three ounces daily for six days, and four ounces daily until now, when the weight still continues to increase. One week ago examination under the fluoroscope disclosed a patent connection between the cecum and the sigmoid colon. Since the stools are normal, with no constipation or diarrhea and the very satisfactory gain in weight continues, the natural cecosigmoidostomy appears a blessing in disguise. The ileostomy opening closed spontaneously on the twenty-fourth day after operation.

The child has started to learn to walk again, has a fine healthy color, plays, talks, and most thoroughly enjoys her return to health.

#### SUMMARY

Recovery from general peritonitis complicating scarlet fever.

The source of the peritoneal infection presumed to be the scarletinal infection since no other focus could be determined.

The importance of preserving the fluid balance in acute infections is demonstrated, together with the impressive therapeutic effect of ultraviolet ray exposures in combating the debility of long-standing infections by stimulating the body nutrition.

A natural cecosigmoidostomy as a residual condition from general plastic peritonitis.

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## WHEN TO OPERATE IN ACUTE MASTOIDITIS\*

By A. EINAR JOHNSON, M.D., F.A.C.S.

WATERTOWN, SOUTH DAKOTA

When to operate in acute mastoiditis is largely a question of the experience on the part of the individual surgeon. The same can be said of when to operate in acute appendicitis. To

lay down dogmatic rules in either case would be a mistake. When one's experience is limited, one is apt to wait for the appearance of the different manifestations which constitute the symptom complex that the particular surgeon has fixed in his mind as proper evidence of the

\*Read before a joint meeting of the Watertown District Medical Society and the Whetstone Valley Medical Society at Watertown, S. D., November 10, 1926.

disease. After experience is gained, one will pay less attention to the classical picture, as, in any event, that is seldom found; but one will make a mental survey of the case as a whole and value the different clinical symptoms with reference to the history of the case and the laboratory findings, and upon these decide whether he is justified in operating, although some one or more cardinal symptoms may be absent.

*History.*—We must not overlook the importance of a thorough clinical history, as this is sometimes the very thing upon which we must decide for or against operation. Quite uniformly we find a history of a preceding suppurative otitis media, often following an acute attack of influenza, scarlet fever, or measles, or, a so-called head cold, which usually, on a closer investigation, means an ethmoiditis.

*Symptoms.*—Very frequently, but not necessarily, there is a discharging ear of the pulsating type.

Sagging of the superior-posterior wall of the canal. Bulging of the drumhead, if it has not perforated.

Pain in the head and tenderness on pressure over the mastoid bone on the affected side.

Later obliteration of the posterior auricular fold.

Still later, especially in young children, swelling and evidence of abscess due to perforation of cortex.

In a few cases we find the Gradenego syndrome (external rectus paralysis, discharging ear, and pain in the region of the eye).

Sometimes we find no tenderness on pressure, which would indicate that the infecting organism is streptococcus mucosus, which may accomplish inflammatory changes and bone necrosis with little or no pain.

In a few cases the symptoms appear to clear up, but a swelling in the neck appears below the mastoid tip. In these cases we are apt to find a Betzold abscess with perforation of the tip cells draining the mastoid abscess into the neck.

The x-ray is a help to corroborate symptoms, especially if we get a positive radiogram.

The blood picture, likewise, must be considered in conjunction with other findings, but we must not forget that there are many other conditions that may cause leukocytosis.

We do well to remember that, although we have an acute mastoid necessitating surgical interference, still we may have one or several of the classical symptoms lacking; also that in any case of ear involvement following an acute febrile condition we should keep an open mind for a possible mastoid infection.

Do not make the mistake of waiting for a swelling with fluctuation behind the ear in order to diagnosis acute mastoiditis. Again we may have a fluctuating swelling behind the ear which is not a mastoid condition.

#### IN CONCLUSION

Having made your diagnosis and having given a reasonable time to the usual palliative treatment, including a proper incision of the tympanic membrane, do not temporize, for it is better to operate early in the disease, as thereby we not only reduce the liability to deafness but also safeguard our patient from possible serious complications which often follow a neglected case.

The following conditions have at times been mistaken for an acute mastoiditis:

Temporal abscess.

Furunculosis of the external auditory canal.

Diseased postauricular gland with a fistula into the external auditory canal.

Acute otitis media without a mastoid involvement.

A pulsating discharge from the middle ear of three weeks standing or longer is considered by most otologists as a positive indication for operation.



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The Hennepin County Medical Society  
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and The Sioux Valley Medical Association

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## THE BULLETIN OF HEALTH

The Metropolitan Life Insurance Company sends out a regular statistical bulletin which has some very interesting reading matter, particularly about the mortality in a large cross-section of population; and it determines that the health conditions among American and Canadian wage earners and their dependents in 1926 were good, not as good as they were in 1925, 1924, or 1921, which years showed a record of low mortality. The death rate (8.8 per 1,000) was identical in 1926 and 1922; and the last year, 1926, was one of the five most favorable years from the standpoint of public health.

This is rather a good showing, considering the number of cases of illness from the epidemics of influenza and its allied infectious disorders. Consequently it does not determine in any way how many sick people there were, or at what rate the population were either well or sick. It simply concerns itself with the mortality records. And as there are more than 17,000,000 industrial policy holders in this company, it is a fair index of what is going on over all the United States and Canada.

They also believe that the span of life from 1911 to 1925 was very much extended. It increased among these industrial policyholders 8.88 years, while the gain in the general population

was only 5.16 years,—all this in spite of the fact that the early months of 1926 were bad, in which they think influenza was a great probable factor; this in itself has covered so large a territory, both in the South and Southwest, and it is so common, so frequent, that we hear of it from other and even more remote points on the North American continent.

There seems to be no change in the prospect for the coming year. The influenzal and other similar infections have already begun, but, fortunately, seem to be growing milder. Yet in the countries of Europe the death rate has been greatly increased; so that, while we may, and before the virulent symptoms arrive here, we must cultivate our good health record and by all direct or indirect means prevent the spread of cases among those who are susceptible.

The death rate from other diseases is interesting too. The combined return for measles, scarlet fever, diphtheria, and whooping cough for 1926 was 28.8 per 100,000; although this marked an increase of 31 per cent over the figures of 1925 (19.7) it is still the lowest death rate for these diseases with the exception of the 1925 figure. It shows, too, that there is a new minimum death rate for diphtheria, which still exists because of the methods of preventing or curing diphtheria, first, by public-health measures and next by antitoxin. It is interesting to note that cancer caused 12,830 deaths in 1926, with a rate of 74.9 per 100,000. This is the highest death rate ever recorded for this disease among the Metropolitan Industrial policy-holders. It is quite evident it is one of the most difficult diseases we have to contend with and the most incapable of improvement.

Then, too, the death rate from diabetes has risen, just as it has among all the principal degenerative diseases, such as organic heart disease, and with a similar increase for chronic nephritis and hemorrhage; but heart disease has, in every year since 1921, been the leading cause of death. Then, in spite of the Eighteenth Amendment and the Volstead Law, the death rate from alcohol has again increased. One leading factor in the increase of the death rate is the number of automobile accidents. From this cause alone the death rate has increased 39.3 per cent in five years, 129.7 per cent in ten years, and 639.1 per cent since 1911. There may be a moral to this, but we are unable to fathom it.

For some this may not be interesting, but homicides were fewer than in 1925, while the suicide rate has gone up to 7.8 per 100,000 as com-

pared with 7.0 in 1925. This is an increase of 11.4 per cent and is the highest figure recorded for suicides since 1917. This, of course, may be attributed to many causes, mostly economic conditions, destructive conditions, states of health, disappointment, poverty, and crime.

### ENCOURAGE YOUR OWN INDUSTRIES

The editor is tempted to quote from a subject discussed by Mr. MacMartin before the Minneapolis Advertising Club a few days ago, for it seemed to him that Mr. MacMartin had the right idea and that it might lead to some future and better developments in the various business and professional lives of Minneapolis men. Mr. MacMartin suggests that we forget our inferiority complex, and, rather than let millions of dollars leave the city annually because we do not know the brains which are located here, that we take the time to discover who our neighbors are and what they can do—what our own communities can do; that, if we would do this, more money would stay in our locality. This does not apply to Minneapolis alone, but likewise to Duluth, St. Paul, and all places. It means, practically, to boost your own town, your own interests, and your own capacities, and, incidentally, to boost your own professions. Mr. MacMartin said:

People from this part of the country are going East for their dentistry when the father of modern dentistry, the man who developed the technique of bridge work on live teeth, thus saving thousands of lives, is located right here in Minneapolis.

We go to Washington for patent lawyers when in Minneapolis there is a man whose book on trademark law is the leading authority.

We go to New York to buy our women's gowns when we have in Minneapolis a concern which originated the idea that has completely revolutionized the merchandising of women's ready-to-wear.

Our people of brains are leaving us for higher salaries in the East because we do not recognize their talents while they are here.

Leave out the word Minneapolis, and substitute the name of your own town, and it will cover the same field, perhaps in different lines, but it will convey the same meaning that Mr. MacMartin so concisely impressed upon the minds of his audience.

Perhaps it is a far cry to other lines of business, but it has been shown that artists, art teachers, and scores of that class of people have either been born, brought up, or educated in the West. It shows, too, that our own town, Minneapolis, is said to have originated the idea of ornamental street lighting, out-door Christmas lighting, the Junior high-school system, the gar-

den clubs, modern methods of garbage collection, and the "Sane Fourth" idea.

The first tractor is said to have been built in Minneapolis. The Duesenberg and Knight motors were both discovered by Minneapolis men.

The filling-station, which has taken the place of the saloon throughout the length and breadth of the land, is said to have been first conceived and developed in this city.

A modern puffed cereal was discovered by a Professor at the University of Minnesota.

The inverse radio coil is the idea of a Minneapolis man.

While we have no skyscrapers in Minneapolis, the idea of skyscraper construction was first propounded by a Minneapolis architect.

Why not carry the illustration a little further and make it apply to the medical profession. Can we do this thing? Are we equal to the task? Are we fitted by training, education, and experience to claim sufficient reliability in ourselves to put the medical-man idea over in this town or any other town, or are we in so close competition with others that it cannot be done? Taking into consideration this Mid-west country, this Northwest country, with its central medical school in Minnesota, and recalling the number of graduates from that school who have not only been successful, but have become renowned in many states (for Minnesota graduates are found in almost every state in the Union), can we go a bit farther, and would it be acceptable to suggest that if we fall down in this sort of thing is it not our own fault? In order to keep pace with better men, different men, we must see that we are properly fitted to compete, and one of the first things that we should do, must do, in order to enter the competitive field is to have a knowledge of what we are trying to do.

The first thing that comes to the writer's mind is the method of examination of patients, which is by far the most impressive thing that the physician can do for his patient. See that a detailed, careful history is obtained, which covers everything as far back as the genealogical tree spreads. Take into consideration the social and environmental surroundings of the individual, and then make an examination and make it thoroughly; if necessary make it over again and keep at it until the examiner feels that he has arrived at a safe conclusion. Then tell the patient or friends, in simple terms, what the conclusions are. The physician must convince his patients of his honesty and his ability, as well as prove it to them; then treat them as they should be treated, four-square.



Then he must remember his own personal side of it. There must not be too much sentimentality, or charity. The patient must be made to understand he has entered into an amicable arrangement to undergo examination, treatment, or operation. Have it definitely understood, definitely arranged for, and definitely carried out. Why not? Perhaps in that way, by properly fitting ourselves, by proving our ability as gained from experience, we may be able to hold more of our patients at home who usually go abroad for such treatment as our local men offer.

#### "FOR THE BETTER CHILD"

In this issue, Dr Richard Olding Beard, who is serving as Secretary to The Northwest Conference on Child Health and Parent Education, which is to sit in Minneapolis, March 8, 9, and 10, issues a challenge and an invitation to the medical profession of this and neighboring states to take its rightful place, with other workers, in the task of health promotion at the point where it will accomplish the most by way of human betterment,—the development of the child. Both challenge and invitation should be accepted with a right good-will.

The slogan of the Conference is "For the Better Child." Let us make it ours!

#### MISCELLANY

##### TRIBUTE TO DR. ROBERT L. WISEMAN, PINE CITY, MINNESOTA

One of the most eloquent proofs of a man's usefulness, and the esteem which that life of service provoked, was shown at the funeral service held in the Armory last Saturday, when over a thousand people in all walks of life passed by the mortal remains of their doctor, counsellor, and friend. The text of the funeral sermon was "The beloved physician." How true this was of Doctor Wiseman. He had given the best years of his life in Pine City and the south end of Pine County, with Rooseveltian energy, to ease the burdens of his fellow-men.

He was a true Christian gentleman, a trustee of the Presbyterian church and interested at all times in the spiritual, as well as the physical, welfare of the community. His death was a result of his self-sacrifice at the time of the Moose Lake fire, when he organized the first relief train and went fully equipped to work as he did, seventeen hours continuously long before outside help had reached the stricken district. Some tainted food served him there poisoned his constitution. Handicapped through the years with failing health, he nevertheless gave himself without stint, day and night, often without prospects of reward. He was the ideal country doctor, the unsung hero of his profession, known by everybody. It was easy to see that he

had endeared himself by love and kindness to all, as that long procession of saddened people passed his bier.

All organizations were represented, the ministers of the Presbyterian, Methodist, and Catholic churches officiated. One could easily sense the desolation caused to Pine City and its people bereaved of their one sure friend and family doctor.

He leaves to mourn him his wife, son George, and daughters Grace and Ruth, besides his mother and brothers.

(REV.) T. BUCKTON  
Pastor of Presbyterian Church  
Red Wing, Minn.

#### NEWS ITEMS

Dr. M. W. Lyons has moved from Ivanhoe to Belle Plaine.

Dr. P. C. Engelhart, of Wood Lake, has moved to Minneapolis.

Dr. Robert Schwyzer, Blackduck, will soon move to Minneapolis.

Dr. Willis Clay has moved from Waterville to Lake Wilson.

Dr. O. O. Larsen has moved from Fergus Falls to Detroit Lakes.

The opening of the Veterans' Hospital at Ft. Snelling has been set for April 9.

Dr. August Eggert, of Grand Forks, N. D., has returned from a trip to Norway.

Dr. Harry Cannon, of St. Paul, is chairman of the committee on Public Health in the Minnesota Senate.

Dr. Moses Barron, of Minneapolis, has returned from Europe where he has been doing postgraduate work, mainly in Vienna.

Dr. H. M. Waldren, of Drayton, N. D., has been visiting the clinics of Montreal, New York, Philadelphia, and Chicago.

Dr. H. J. Prendergast, of St. Paul, has been appointed Medical Examiner of the St. Paul Civil Service Bureau, an office just created.

Dr. O. E. Stewart, who has been associated with Dr. E. H. Marcum, of Bemidji, for a couple of years, has moved to Chicago. Dr. T. P. Groschupf becomes a partner of Dr. Marcum.

Dr. John H. Rishmiller, of Minneapolis, Chief Surgeon of the Soo Railway, has returned from a trip for rest and recreation to Belle Air, Florida.

Dr. Walter Huseby, who completed his medical course at the U. of M. last month, has be-

come associated with Dr. Theodore Holtan, of Waterville.

Dr. Thornton McK. Northey, a recent graduate of the Medical School of the U. of M., was married last week to Miss Mary Dibble, also of Minneapolis.

Dr. J. E. Hetherington, newly elected president of the Grand Forks District Medical Society presided for the first time at the Society's January meeting.

Drs. R. D. Campbell and H. H. Healy, of Grand Forks, N. D.; Dr. J. E. Countryman, of Grafton, N. D.; and Dr. E. A. Pray, of Valley City, N. D., visited eastern clinics last month.

A drive was on in Billings, Mont., last week to raise \$40,000 with which to equip and furnish the new Deaconess Hospital in that city. Forty teams. The enthusiasm is great.

Dr. Henri Frederick, of Liege, Belgium, gave a Mayo Foundation lecture in Rochester on the evening of February 1. His subject was "Humoral transmission of nervous action."

Dr. H. Winnett Orr, of Lincoln, Nebraska, gave the first annual Mayo Foundation lecture in orthopedic surgery in Rochester on the evening of January 25. His subject was "Osteomyelitis."

Dr. Claude J. Ehrenberg, of Minneapolis was married last week to Miss Mona Ray Munro of Arlington, Mass. Dr. Ehrenberg is a graduate of the Medical School of the U. of M., class of '20.

The "Loring Park Clinic" (so called) of Minneapolis, conducted by a layman, seems to have come to the end of its career, as it has defaulted on its notes, which are largely in the hands of the public.

Dr. Edward A. Shannon, of Bemidji, died last month at the age of 65. Dr. Shannon was a graduate of the St. Paul Medical College, class of '86, and had practiced in Bemidji for over twenty years.

Dr. J. A. Myers presented an address on "Recent Advances in Our Knowledge of Diseases of the Chest" before the Sigma Xi Club of Carleton College and the Rice County Medical Society on January 14.

Dr. William H. Walsh, of Chicago, Executive Secretary of the American Hospital Association, was in Minneapolis last month looking over the plans for the convention of the Association in this city in October (10-14).

Dr. J. A. Myers presented a paper on "Tuberculosis in Childhood" before the Chicago Tuberculosis Society last week (February 10). This Society consists of about seventy-five physicians especially interested in tuberculosis.

The people of Pine City propose to erect, in some form, a memorial to their "old-time" physician, Dr. R. L. Wiseman, who recently died there greatly honored and beloved by the citizens of that city and surrounding country.

Dr. J. W. Kernohan has returned to the Mayo Clinic after a vacation spent at his home in northern Ireland. While he was abroad he visited pathologic clinics in Italy, Germany, Switzerland, Holland, and the British Isles.

Dr. Frank E. Burch, of St. Paul, has been appointed to fill the position on the U. of M. Medical School Staff made vacant by the death of Dr. William R. Murray, former dean of the Eye, Ear, Nose, and Throat Department.

Dr. Thomas R. Watson, of Clarissa, died on January 16, at the age of 62. Dr. Watson graduated from the Medical School of the U. of M. in the class of '95, and had practiced medicine and conducted a drugstore in Clarissa for twenty years.

Dr. Walter J. Marcle, of Minneapolis, President of the Hennepin County Tuberculosis Association, has been appointed Chief of the Department of Tuberculosis of the United States Veterans' Hospital, at Fort Snelling, to be opened in March.

Dr. Henry C. Cowles, of the University of Chicago, gave a lecture, under the auspices of The Mayo Foundation and the local chapter of Sigma Xi, in Rochester, on the evening of February 3. His subject was "Plant ecology in human affairs."

The Yellowstone Valley Medical Association of Montana is planning to have a meeting in Billings in March or April at which medical men of national reputation will present addresses. Drs. Stripp, Watkins, and Perry, of Billings, have charge of the program.

In an address by Dean French, of the Medical School of the University of North Dakota, on the work of the State Health Laboratory and its substations, Dr. French stated that the number of tests made by the State had increased from 1,826 in the year 1908 to nearly 16,000 in the year 1926.

Dr. Sterling H. Olson, who practiced in Milaca, Minn., for fourteen years previous to



1919, died last month in Colorado Springs, Colo., at the age of 48. Dr. Olson was a graduate of the Medical School of the U. of M., class of '01.

Dr. Kana Ikeda, who has been at the head of the laboratories of the General Hospital of Minneapolis for several years, has been appointed director of the laboratories of St. Luke's Hospital, St. Paul. Dr. Ikeda, who stands very high in the profession, has contributed frequently to THE JOURNAL-LANCET.

Two important medical bills have been introduced in the Minnesota Legislature, one requiring all applicants for licenses to practice in Minnesota to pass an examination on the basic sciences, only the Christian Scientists being exempt. The other bill puts the selection of expert medical witnesses in the hands of the court.

Dr. Wilfred Grenfell, of Labrador, was the guest of the Grand Forks (N. D.) District Medical Society at its meeting last month and gave a talk on his work in Labrador. The Society made him an honorary member, and Dr. Grenfell made a fitting reply expressing his thanks for the honor. He also lectured in Grand Forks and other North Dakota cities.

The following were elected officers of the Northwestern Medical Society of North Dakota, at the annual meeting held in Minot on February 1: President, Dr. F. E. Wheelon; vice-president, Dr. H. E. Landes; secretary-treasurer, Dr. A. Sinamark, all of Minot. Cases were presented by Drs. H. M. Erenfeld and H. E. Landes; and Dr. A. L. Cameron presented a short paper.

Dr. Adolph O. Aaker, of Minot, N. D., died last month at the age of 49. Dr. Aaker was a graduate of the College of Medicine of the University of Illinois, class of '07, and came to North Dakota the next year. He practiced in Velva until his removal to Minot in the autumn of last year. He practiced at Ruso for two years before his removal to Velva. He was a musician of high attainments and also a composer of music. His death was caused by a fall.

The Black Hills (S. D.) District Medical Society held its annual meeting last month at Lead. The attorney (Mr. Keller, of the Homestake Mining Company) presented a paper on "Consent to Operate," which was fully discussed, and will be published in our columns later. The following officers were elected: President, Dr. Guy Ramsey Philip; vice-president, Dr. B. A. Young, Hot Springs; secretary-treasurer, Dr. J. L. Stewart, Lead; delegates, Drs. W. E. Morse and R. J. Jackson, Rapid City.

The Devils Lake (N. D.) District Medical Society held its annual meeting at Devils Lake, on February 4, when the following officers were elected: President, Dr. H. F. Emert, Sarles; vice-president, Dr. G. J. McIntosh, Devils Lake; secretary, Dr. F. G. Drew, Devils Lake; censor, Dr. C. J. McGurran, Devils Lake; delegate, Dr. W. C. Fawcett, Starkweather; alternate, Dr. W. D. Jones, Devils Lake. Dr. R. H. Beek, of Lakota, presented a paper on "Pain," which was thoroughly discussed; and three new members were received.

The Quain and Ramstad Clinic, of Bismarck, N. D., moved into their new clinic building last week. Their new building is one of the largest and most commodious occupied by a clinic in any city of the Northwest. It is 75x110 feet and three stories in height. It was built exclusively for the Quain and Ramstad Clinic and is a handsome structure equipped on the most modern lines for a clinic building, absolutely fireproof and provided with every comfort for the patients who pass a day or night within it, and likewise for the staff and their assistants. The medical profession is proud of such means of serving the public.

Dr. Joseph G. Millspaugh, of Little Falls, died on January 17, at Monrovia, Calif., at the age of 76. Dr. Millspaugh was a graduate of the University of Michigan Medical School, class of '76, and later of Columbia. He practiced in Battle Creek, Mich., for several years, and then moved to Park River, Dakota Territory (now North Dakota), for his health. He at once became prominent in medical circles, and was the first president of the State Medical Association of the Territory. He moved to Little Falls, Minn., and practiced there until his death. He belonged to many medical societies, and was always prominent in his medical work.

At the annual meeting of the Aberdeen District Medical Society of South Dakota, held at Aberdeen last month, the following officers were elected: President, Dr. W. A. Bates, Aberdeen; vice-president, Dr. J. E. Dunn, Groton; secretary, Dr. R. G. Mayer, Aberdeen; delegates,—Dr. E. A. Pittenger, Aberdeen; Dr. R. S. Hart, Groton; Dr. E. W. Whitcomb, Cresbard; alternates, Dr. F. M. Crain, Redfield; Dr. J. D. Alway, Aberdeen; Dr. F. W. Freyberg, Aberdeen; Drs. M. C. Johnson and J. F. Adams, of Aberdeen, were appointed censors. Addresses were made by the retiring president, Dr. J. K. Kutnewsky, Redfield; and by Drs. J. G. Cross and F. M. Schlutz, Minneapolis.

**Wanted—Laboratory Technician and Anesthetist**

By a hospital in a Minnesota city of 7,000 inhabitants. Address 324, care of this office.

**Office Space in Minneapolis for Rent**

Space in a very fine suite in a first-class building, is offered to physician or dentist. Address 317, care of this office.

**Office Position Wanted**

By a girl aged twenty with high school education and one year's training and some private experience as a nurse. Address 323, care of this office.

**Wanted**

To correspond with a man who has received the M. S. degree in surgery at the Mayo Clinic. Can offer possibly the best proposition in the Northwest. Address 318, care of this office.

**X-Ray and Laboratory Technician Wants Position**

Have had three years experience as x-ray technician and routine clinical laboratory work. Will take position in hospital or office. Address 312, care of this office.

**Position Wanted in Physician's Office**

By a young woman who has had one year's training in a hospital and some office work. References as to character and ability. Address 310, care of this office.

**Laboratory Technician Wants Work**

Has had three years experience in large hospital. Can do both x-ray and general laboratory work. High-grade references. Address 305, care of this office.

**Office Space for Rent**

Space in down-town Minneapolis office for rent, March 1. Four doctors, a dentist, x-ray technician, and stenographer in office. Address 319, care of this office.

**For Sale**

An unappraised, well-equipped modern drug store. Sales \$12,000. Stock and fixtures worth about \$7,000. Good proposition and opening for a physician. Address 314, care of this office.

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A 1-horse power motor converter used to convert 110 d. c. to 111 a. c. Has been used for a diathermy apparatus only about one year and is in good condition. Cost \$125; will sell for \$75. Address 315, care of this office.

**Practice for Sale**

Established practice and office equipment for sale in largest city in North Dakota. Equipment includes New Diathermy Machine. Cause for selling, failing health. Address 326, care of this office.

**Obstetrician Wanted**

A pediatrician with a large and well-established practice wants an associate in an Iowa city, well qualified to devote his whole time to obstetrics. Nothing to buy. Address 311, care of this office.

**Position Wanted**

By a graduate nurse in office of a doctor or dentist, or will consider taking charge of a private hospital. Experienced in all branches of nursing, including giving anesthetics. Address 316, care of this office.

**High-grade Technician Wants Position**

Can take care of the laboratory and x-ray work in a clinic or small hospital or take charge of either department in a large hospital. Has had nearly two years country and city experience. Address 307, care of this office.

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By an up-to-date 10-bed hospital in South Dakota at once. Give age, height, graduation year, weight, and religion. Send recent photograph in first letter. Doctors will confer favor if they will show this notice to some good nurse. Salary, \$100 a month with board and room. Address 327, care of this office.

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An unopposed practice in town of 600 in Northern Minn., in heart of Lake Region. A large territory, hospital facilities near by, fine roads, good schools and churches. Cash business from \$7,000 to \$8,000 a year. Am asking \$3,000 for fine nine-room modern residence and office equipment. Must quit general practice on account of my health. Address 325, care of this office.

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In north central Minnesota. A six-bed, fully equipped hospital; established 16 years. Scandinavian community. No competition in town. Nearest competition 10 miles. Large territory in a fine dairy country. Fine roads. State high school. Did \$12,000 business in 1926, and collected \$10,000. Requires \$5,000 cash to handle the deal. Terms on balance of \$7,000. Building alone worth the price. Owner is retiring. Address 313, care of this office.



# THE JOURNAL-<sup>-</sup>LANCET

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## SOME OF THE PROBLEMS ENCOUNTERED IN OPERATIONS ON THE GALL-BLADDER AND BILE-DUCTS\*

By E. STARR JUDD, M.D.

ROCHESTER, MINNESOTA

The trend of thought in relation to disease of the gall-bladder now centers around the question as to just what is the exact nature of this condition. Nearly all observers agree that the liver, the pancreas, and the excretory mechanism are closely related and involved, jointly, in many disease processes.

Tremendous progress has been made in the study of infection, and undoubtedly certain of the diseases of the hepatic system are the result of infectious processes. When one attempts to prove this, however, one comes in contact with many surprises, for it is frequently impossible to demonstrate bacteria of any kind in gall-bladders that are greatly changed as the result of disease. The gall-bladder may be enlarged and its walls greatly thickened, due to edema and swelling, and there may be considerable necrosis of the mucous membrane without any responsible organisms being demonstrable. Certain observers believe that disease of the gall-bladder is never due to infection,\*\* but that it is always the result of changes in the tissues from disturbances of the venous and lymphatic circulation caused by the pressure of a stone lodged in the cystic duct. Various hypotheses have been advanced, all of which are difficult to prove, but it must be admitted that benign disease other than infection frequently exists in the gall-bladder. Much has

been said about the "strawberry" gall-bladder, in which the epithelial cells of the mucous membrane lining the gall-bladder contain deposits of lipoid throughout the mucous membrane large enough to appear as white spots. Patients having this type of a gall-bladder frequently present histories typical of cholecystic disease, and, furthermore, when the gall-bladders are removed symptoms are relieved. Such gall-bladders are free from the usual signs of inflammation; as a rule there is no round-cell infiltration or swelling, and often it is not recognized until the gall-bladder has been opened. This tissue change has been termed "cholesterosis." As Sweet and Mentzer have said, it is probably an indication that the gall-bladder has something to do with the metabolism of fat. The more one studies diseases of this organ the more one is convinced that they may be connected in some way with disturbances in metabolism.

Often in removing the gall-bladder one finds that it is edematous and that its walls are many times thicker than normal, also that after it is freed the portion left on the surface of the liver is edematous and full of fluid. Such gall-bladders do not contain pus but a rather thin watery bile. Patients are usually not seriously ill, yet the disease has caused complete destruction of the gall-bladder and is out of proportion to the symptoms. The changes in the appearance of the gall-bladder are not unlike those occurring in other tissues as a result of chemical poisoning,

\*Presented before the Sioux Valley Medical Association, Sioux City, Iowa, January 19, 1927.

\*\*Denton, James: The mode of origin of gall-bladder lesions. Arch. Surg., 1927, xiv, 1-13.

such as are seen in an iodine burn, or when an irritating chemical solution is allowed to penetrate the subcutaneous tissue during the intravenous administration of calcium. The resemblance of these tissue reactions has impressed me on many occasions. The best evidence that certain chemical changes may cause these conditions in the gall-bladder has been obtained from Mann's experimental studies on the toxicity of Dakin's solution. The intravenous administration of Dakin's solution produces changes in the tissues of the gall-bladder that are identical grossly and microscopically with those found in many patients at the time of operation. It is of interest that these changes affect the tissues of the gall-bladder alone; not even the hepatic tissue is altered unless a very large dose is given. So far as I know, no explanation has been offered as to how or why this occurs, but at least these observations support the theory that chemical changes may be the cause of cholecystitis. Under certain conditions the chemistry of the blood might be so changed as to affect the tissues of the gall-bladder.

Concentration of the bile and regulation of the pressure in the bile ducts seem to be the two known functions of the gall-bladder, and the question of whether a disturbance of these functions would result in the development of symptoms recognizable as coming from a diseased gall-bladder has been widely discussed. Progress in medicine and surgery will come from a better knowledge of physiology and physiologic chemistry. At the present time, however, it must be admitted that operations based on disturbed physiologic processes have not been successful as a rule.

We have learned recently that in certain cases when there is a more or less general metabolic disturbance and a low metabolic rate the Graham-Cole test of the gall-bladder is likely to give a positive reaction. The patients are likely to respond slowly, to lack ambition and energy, to have no free hydrochloric acid in the stomach, and in every way to present a picture of low activity and function. Although the function of the gall-bladder is undoubtedly upset in these cases, treatment should be such as to re-establish normal equilibrium; it should not consist of operative procedures on the gall-bladder.

After all, disease of the gall-bladder is a definite entity. The clinical symptoms are clear and the diagnosis is readily established by the clinical data. When the symptoms are

definite, treatment is more satisfactory. From the study of a large series of cases we felt justified in carrying out operations on the gall-bladder with no more evidence than the clinical history whenever there was a syndrome for cholecystitis. At the present time, pain, its character, site, and radiation are the chief points on which to base a diagnosis of disease of the gall-bladder. This holds true after exploration, for if the surgeon is surprised to find no stones and a more normal-appearing gall-bladder than he expected and if other possible lesions are excluded, an operation on the gall-bladder is justifiable. Chronic cholecystitis apparently does not cause tenderness or aching in the side. Dyspepsia may result from inflammation in the gall-bladder, but removing the gall-bladder for chronic dyspepsia in cases in which there has been no associated colic will yield very unsatisfactory results. Disturbances in digestion may be produced by cholecystic disease, and these troubles will be relieved when the gall-bladder is removed. The associated colics furnish the proper clinical basis for surgical treatment.

Certain kinds of food aggravate the symptoms of cholecystitis, and, therefore, much can be accomplished in treating early cases or those in which surgery is contra-indicated by prescribing the proper diet. Gas on the stomach is a common complaint. Low gastric acidity is attributed to cholecystitis in contrast to the high acidity in cases of ulcer. Investigations are now being carried out in the Mayo Clinic to determine the effect of removal of the gall-bladder on the acids in the stomach, a point which is probably not of great diagnostic value at the present time. The diagnosis is still largely a clinical problem, in spite of the great advances made in roentgen-ray technic. Undoubtedly the work of Graham and Cole will eventually greatly increase our knowledge of the liver and biliary tract. Before the use of dye, roentgen-ray examinations were rather unsatisfactory. Stones could be diagnosed in about 30 per cent of the cases and a thick-walled gall-bladder in a small proportion. By the dye method it is now possible to diagnose more cases of stones than by the old method. The principal value of the new test is in determining the response of the gall-bladder. The dye is liberated into the circulation, passes through the liver, and is eliminated in the bile. As the bile is concentrated in the gall-bladder the dye becomes sufficiently concentrated to produce a shadow in the roentgenogram. If the gall-bladder is functioning



normally the dye will gradually pass out with the bile, and after a certain number of hours under normal conditions the shadow will disappear. On reflection it will be seen that there are several chances for the result to be wrongly interpreted: there may be something to interfere with the dye getting to the liver, or some change in the liver itself to alter the findings, and, of course, interference with the concentrating function of the gall-bladder might be misleading. Usually, however, if the concentrating function of the gall-bladder is disturbed it may be assumed that the gall-bladder is diseased even if there is no inflammation or other change in the tissue. It may be that the concentration of bile is the function of the gall-bladder which is disturbed in these patients who present low metabolic rates and other general manifestations of hypothyroidism, some of whom are having their gall-bladders removed because of data revealed by the dye test. H. S. Plummer has called our attention to these cases. We should all continue to study the biliary tract by the dye test, but we should not recommend surgery on the basis of this test alone. Unfortunately nearly every gall-bladder which is removed shows slight round-cell infiltration in some part of its wall, and the pathologic report mentions low-grade cholecystitis. It is not likely that this condition would be capable of producing clinical manifestations.

The problems that confront the surgeon after he has exposed the gall-bladder may be simple or they may be exceedingly difficult. If there

is definite disease with or without stones the gall-bladder should be removed, provided too great a surgical risk is not involved. If jaundice, pancreatitis, or too extensive infection is a complication it may be best to drain the gall-bladder with the idea of performing cholecystectomy later. Often the greatest problem is to decide whether or not the gall-bladder is diseased. Formerly it was believed that a tense non-compressible gall-bladder indicated disease. A thick-walled gall-bladder may not be compressible because of lack of elasticity, although the gall-bladder is tense and noncompressible under certain other conditions, such as starvation. Enlargement of the lymphatic glands at the bottom of the gall-bladder is suggestive of cholecystitis but apparently this is sometimes due to disease outside of the gall-bladder. When the gall-bladder has been removed on this basis patients have not done well, as a rule. Undoubtedly, in certain cases in which operation is performed with the expectation of finding disease of the gall-bladder, and it is not found, the condition is primary hepatitis or pancreatitis. If this can be proved the gall-bladder should be removed because the change produced in the biliary tract either by overcoming the action of the sphincter of the common duct, or for some other reason, is beneficial in these cases.

The extensive, careful researches on the physiology of the liver, combined with intensive clinical investigations now being carried out in all clinical centers, may be expected to solve these various problems in the near future.

## PROCRASTINATION IN SURGERY\*

By B. S. ADAMS, M.D., F.A.C.S.

HIBBING, MINN.

The teaching of our medical schools twenty-five years ago was conservative. We were taught to operate only after establishing a definite diagnosis. Appendicitis was almost exclusively an interim operation; the gall-bladder was to be drained only after years of pain and suffering; tubal pregnancy was seldom diagnosed and operated on before rupture; an epithelioma would be excised after various pastes had been unsuccessfully used; an exploratory operation was unusual. As I reflect on the past it appears that this early teaching has been the cause of many mistakes;

too many cases have been lost through inability to recognize and to care for acute conditions that needed immediate surgical relief. Too often have procrastination and delay allowed the opportune time for saving the patient to slip away, and when it was too late an operation only hastened the end.

But procrastination in surgery does not mean delay in operation alone, nor even chiefly. Being a technician never made a surgeon; the important factors in surgery are diagnostic ability and judgment. The man who operates chiefly to increase the number of operations he has performed, or to enhance his income, to add to his

\*Presented at the Annual Meeting of the Northern Minnesota Medical Association, at Crookston, Minn., August 9 and 10, 1926.

own glory, or to make easy safe operations on normal tissue for advertising purposes, is beneath contempt, and unfit to belong to the medical fraternity. When a patient comes to a physician that physician at once accepts a great responsibility. And if he does not give his patient the most careful attention possible, if he fails to recognize a condition that is serious and that does require immediate operation, if he cannot recognize between the acute surgical case and the acute medical case, if he does not get all the information possible and act upon the conclusions that his information make possible, and act quickly, he is guilty of procrastination, and perhaps of causing an unnecessary death. It is our duty to examine every case very carefully and very thoroughly. The case history is most important and to get all the details requires care, skill, and patience, as well as good judgment, but it is so important that it must be obtained. The physical examination should be as thorough as possible and no details that will add light in confirming a diagnosis should be neglected. The more information one has the better will one be able to approach a correct diagnosis. How easy it is to mistake a pneumonia for a beginning typhoid or appendicitis, only those who have made the mistake can know. How many cases of osteomyelitis have been mistaken for rheumatism, the large number of chronic invalids and the mortality records alone can tell. We too frequently hear of an appendectomy developing an exanthematous rash on the third or fourth day, or of being operated on later for a kidney stone, or some other condition to warrant lauding ourselves too highly.

But while these unfortunate errors in diagnosis are to be borne in mind, we must watch out that we do not go to sleep and allow an inflamed appendix to burst, the twisted gut to become gangrenous, or the tubal pregnancy to rupture. We must always be alert for the real seriously acute conditions that must have immediate surgery to get the best results, and where possibly a little delay will cause even death.

Among the conditions that require immediate surgery I shall take up only a few that any physician in this part of the state is most apt to come in contact with.

*Traumatic injuries.*—Every physician who is doing general work or general surgery, whether in the city or in the country, is constantly having accident cases to deal with. And no condition requires more immediate attention than do these. It is important to disinfect every laceration at

the earliest possible moment. A little iodine early will do more good to the patient than opening up extensive infections in the deeper tissues or in the tendon sheaths later. And if seen only after infection is present immediate and free incision is far more valuable to our patient than a later amputation. Fractured bones require immediate attention; if there is any accident in which delay is inexcusable it is in treating broken bones. If circumstances are such that it is impossible to reduce the fracture at once, at least apply a temporary splint, if only a blanket splint, to prevent the fracture becoming more displaced and injuring the soft parts, possibly converting a simple fracture into a compound one. If the fragments in a fracture case are displaced they should be reduced, usually under anesthesia, and immobilizing splints applied just as soon as it can be done. Delay only makes the reduction harder, causes more extensive injury to the soft parts, increases the hemorrhage, and results in more swelling and pain, and greater muscle tension and rigidity.

Delay in treating fractures is never warranted. Dislocations are in the same class as fractures; a day's delay in reducing a dislocated shoulder or hip may prevent its ever being reduced except by open operation. Immediate treatment is important especially in compound fractures where careful cleansing of the skin, plenty of iodine or mercurochrome in and about the wound, thorough cleansing of bone if exposed, and débridement if needed, covering with sterile dressing followed by immobilizing splints, if done very early, often make the difference between saving and losing the limb. Fracture work at its best is trying and difficult but a good beginning is usually more than half the battle. This applies with particular emphasis in skull fractures. Every fractured skull is a surgical case of major proportions, requiring most careful watchfulness and care. Hemorrhage, paralysis, depressed bone, each calls for immediate surgical relief if the patient is not in too great shock. Symptoms of intracranial pressure—loss of consciousness after a free interval, a slowing of the pulse rate with increased tension, rising blood pressure, slow labored stertorous breathing, twitching, convulsions, and paralysis call for immediate surgery. Earl says that the "most reliable sign of increased intracranial pressure is found in the fundus, the so-called 'choked disk.'" Cushing considers that 90 per cent of cases of intermeningeal hemorrhage die if not relieved surgically, while, if operated on, 67 per cent recover. Sharpe says "any opera-



tive procedure for the relief of intracranial pressure should be undertaken while the pulse rate is descending, at 60 or below, for once it has reached its lowest level of medullary compression, the danger of medullary edema is great. If it does occur the pulse rate begins to rise rapidly, and I have yet to see the patient recover, whether or not operation is performed, once the pulse rate has descended to its lowest level and then begun to rise rapidly. The danger of operation while the pulse rate is descending is far less than the danger of the possible onset of the signs of a medullary edema, the mortality being practically 100 per cent."

*Appendicitis.*—One of the most common diseases that we have to diagnose and treat is appendicitis. Possibly it may be thought that the last word has been said on this subject, but for a disease which, if diagnosed and operated on in time, should have a negligible mortality, the number of deaths each year is appalling; during the years 1921, 1922, 1923, and 1924 (the last figures available from the census department) the number of deaths per hundred thousand from appendicitis was 12,809, 13,229, 14,345, and 14,788. To be sure all too frequently the sick person does not consult the doctor in time. And often the diagnosis is very hard to make, especially in children. But pain in the abdomen, tenderness in the lower right quadrant, a little rigidity of the muscles on the right side, nausea, possibly a little fever—these should always make one suspicious of appendicitis. A high fever is very unusual; constipation is the rule, but in two very acute cases during the past year, which at operation showed badly inflamed appendices, diarrhea was present. I believe a white leucocyte count is of very great aid in diagnosing appendicitis, and especially in estimating the severity of the inflammation. A leucocyte count from 12,000 to 25,000 with pain in the right lower quadrant is almost pathognomic and the higher the count the more severe the inflammation. To procrastinate in these cases, even for a few hours, is apt to be disastrous. I recall one case in which operation three hours after the first pain showed an appendix half an inch thick and nearly ready to burst.

*Intestinal obstruction.*—The disease that has been hardest for me to diagnose in time to do good has been intestinal obstruction. One sees so many cases of obstipation with some vomiting and pain that recover that when one does get a real obstruction he is apt to delay too long. De Quervain says "Cases of intestinal obstruc-

tion exemplify better than any other condition how dangerous it is to wait for the fully developed clinical picture before arriving at a decision. To pursue this course is to sacrifice the life of the patient to refinement in diagnosis, excellent though the motive be. There is no object in being able to proclaim at the autopsy that we had correctly diagnosed the situation and nature of the obstruction. Our main effort must be to recognize when surgical relief should be afforded, although we may not always know the precise position and character of the obstruction. This is no encouragement, however, to laxity in diagnosis. On the contrary careful observation, thorough examination, and a consideration of all signs are indispensable, but this must be done rapidly, and we must decide rapidly if our reflections are to be of any use to the patient." A sudden definite onset of intermittent colicky pains, repeated vomiting, localized contraction of the bowel, are symptoms that should suggest ileus. According to De Quervain "Repeated percussion and auscultation afford the best aid to diagnosis. If we repeatedly hear at any one place a metallic note, splashing or ringing noises, or exceptionally a stenotic murmur, and if the abdomen appears to be asymmetrical with a localized area of the intestine, despite its tympanic note, more resistant than its surroundings, we ought especially to think of ileus. But on the other hand the prevalence of dead silence from the beginning in an especially distended bowel most probably points to peritonitis, or at any rate to a severe toxic intestinal paralysis." Other symptoms follow rapidly; the pulse becomes rapid and weak, breathing becomes rapid and shallow, the amount of urine is diminished, meteorism usually develops, the general appearance becomes worried and anxious, and the patient looks very sick.

If the case is obstruction due to fibrous bands the onset is sudden, the prostration severe, and almost always there is a history of a previous abdominal inflammation or an abdominal operation. In case of volvulus the onset is sudden, pain extremely severe, and prostration is most marked. This form is seldom seen before middle age and usually in persons subject to chronic constipation. Intussusception occurs almost always in babies and small children; there are likewise a sudden onset, repeated attacks of severe pain, with a fairly free interval between the attacks, passing of bloody stools and mucus a little later, and frequently a palpable tumor. If the diagnosis had been made early enough, followed by immediate operation, the 6,807 per hundred

thousand who died of intestinal obstruction in 1924, might have been saved. It is one condition where early operation offers the only hope of saving life. The first twelve hours is early; the second twelve hours is late; after that it is usually too late.

*Acute abdomen.*—The term "acute abdomen" covers a large list of conditions where the symptoms do not allow a definite diagnosis, but emphatically indicate that an inflammatory condition exists within the abdomen so serious that, unless quickly relieved, it will cause death. Shock, prostration that is intense, repeated or continuous vomiting, very severe pain that persists and becomes worse at times, rapid pulse, increased leucocyte count, some fever, an anxious expression, a generally very sick-looking patient—these all show that the patient is seriously ill, and to wait until a definite diagnosis is established is to miss the golden opportunity. Whether it be a ruptured peptic ulcer with its boardlike rigidity of the abdominal wall, an empyema of the gall-bladder or a perforated gall-bladder, a tubal pregnancy, an ovarian cyst with a twisted pedicle, an intestinal obstruction, or an inflamed appendix, immediate exploratory operation is demanded, the site of incision being determined, as well as possible, by the symptoms and location of greatest pain. As Robt. A. Johnson, of Baltimore, says: "There is only one way to be certain of what is going on in the abdomen, and that is by an exploratory incision in grave cases, and in this laparotomy presents less danger under modern technic than uncertainty, and I mean by that an operation done in time; not a sort of ante-mortem examination after shock and sepsis have done their deadly work on one who has called on you for help."

Twenty-three years ago, while visiting Chicago clinics, I heard Dr. Bevan make this remark: "There are three conditions that every physician should be able to operate on instantly: strangulated hernia, acute mastoid, and acute osteomyelitis."

Everyone recognizes that the only treatment for a strangulated hernia is immediate operation, and yet during 1924, the death rate for hernia was 3,673 per hundred thousand. Such a high rate seems inexcusable but it means that we must teach the public the necessity of early operation. It also means that we must do better operation for simple hernia to develop a more favorable opinion in the public mind towards herniotomy. As long as poor operations are done for simple hernia, operations which are followed by recurrence, a good many people will favor wearing

a truss. And the more who wear trusses the more the strangulated hernias there will be. An irreducible hernia does not always mean a strangulated hernia; but who can tell in every case which the irreducible hernias contain, gut or omentum? The safe way is to operate. I recently found gangrenous omentum in an irreducible hernia; surely not a very safe condition to leave for Nature to heal.

*Acute mastoid.*—Some will think that the acute mastoid is not very urgent, but the death rate of 1,223 per hundred thousand in 1924 indicates that it is no trifling disease, and the only safe way to avoid the serious complications that follow its wake is to provide early drainage. Pain following earache, tenderness behind the ear, fever, and a deformed auditory canal with inflamed drum-head, even though possibly there may be a free discharge of pus through the ruptured otic membrane, usually demands mastoid drainage. If an acute purulent mastoid is not quickly drained a good many will go on and develop meningitis, infection of the lateral sinus, or brain abscess. The operation of drainage is comparatively easy, the relief very prompt, and the danger of serious complications quickly relieved.

*Osteomyelitis.*—Another condition that demands immediate drainage is acute osteomyelitis. The pain is usually very severe, tenderness is exquisite, fever high, shock and prostration sometimes so great that the location of the tender spot may be difficult to find; the tender spot is usually near the end of a long bone, but not quite in the joint. If seen later the joint may seem to be the site of tenderness, but if seen early the tender spot will usually be located a short distance from the joint. Star says, "Careful attention to the history of the onset of symptoms will reveal in most cases the fact that the patient had some focal infection a week or more previously. This infective focus may have been a sore throat, a discharging ear, an abscessed tooth, or possibly more commonly a skin lesion, such as an infected blister on the heel or foot, a boil or carbuncle, or an infected umbilicus. The determining factor in the location of the bone inflammation is most likely a trauma of the extremity, such as a fall or a wrench, often of only moderate extent and not severe enough in itself to produce any symptoms. The chief objective symptoms at this early stage will be a definite point of tenderness over a limited area situated at the epiphyseal line, with no complaint of tenderness to the palpating finger in the surrounding bone area. The neighboring joint can be moved freely without pain if



handled carefully, and there will be no fluid in the joint or other evidence of arthritis. Accompanying the complaint of pain and localized tenderness there will be signs of toxemia, such as headache, dry tongue, malaise, and sometimes vomiting. The pulse will be raised commonly to 120 and 130 per minute; the temperature will be correspondingly high, to 103 and 104 degrees, with a definite polymorphonuclear leucocytosis usually up to 25,000 or 30,000." X-ray in this stage is absolutely negative. At a later stage the pus may burrow through the cortex; and edema, swelling, redness, and increased tenderness will follow. But before this occurs the pus may also burrow lengthwise inside the bone, causing extensive bone necrosis, or may even rupture into the adjacent joint. A general septicemia is all too frequent a complication of this rapidly spreading infection. Perhaps there is no acute infection in which the difference in results between early and late treatment is so great. A small incision, a few drill holes through the bone cortex over the tender area, or a small

chisel hole into the medulla so quickly and easily relieves the pain and toxemia that it should always be done in suspected cases. The results if this early drainage is not established are so serious, so apt to be fatal, and if not fatal so certain to cause long suffering and great incapacity that an early diagnosis and drainage is especially important.

With careful technic an early operation, whether in the abdomen or in the bone, is relatively safe and simple. In comparison to the serious consequences of allowing an acute rapidly spreading infection to progress it is as nothing. And the results of early operation are so satisfactory that we cannot do justice to our patients unless we quickly recognize these very serious conditions, study them carefully and promptly, and operate early.

1. F. de Quervain: Clinical Surgical Diagnosis.
2. Robert Earl: Fractures of the Skull.
3. Robert W. Johnson: Baltimore. Pernicious Delay in Surgical Cases.
4. Clarence I. Starr: Toronto. Acute Osteomyelitis.
5. Wm. Sharpe: Journ. A. M. A., vol. 46, p. 1536.

## MODERN ASPECTS OF THE DIAGNOSIS AND TREATMENT OF TUBERCULOSIS—PART II—Continued

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### VII. SYMPTOMS AND MODES OF ONSET OF CLINICAL TUBERCULOSIS

#### *Symptoms of Tuberculosis*

In the diagnosis of clinical tuberculosis nothing is more important than a careful study of symptoms. Recently Pottenger grouped the symptoms of tuberculosis on a physiological basis as follows:

#### *Group 1. Symptoms due to toxemia*

Caused by harmful stimulation of:	Symptoms:
I. Nervous system	1. Malaise
II. Endocrine System	2. Lack of endurance
III. Sympathetic Nervous System	3. Loss of strength
IV. Sympatheticotrophic endocrines, particularly adrenals and thyroid.	4. Nerve instability
	5. Diminished digestive activity
	6. Increased metabolic rate
	7. Loss of weight
	8. Increased pulse rate
	9. Night sweats
	10. Fever
	11. Leucocytosis

#### *Group 2. Symptoms due to reflex causes*

Hoarseness  
Tickling in larynx  
Cough  
Digestive disturbances (hypermotility and hypersecretion)  
Loss of weight  
Circulatory disturbances  
Chest and shoulder pains  
Flushing of face

#### *Group 3. Symptoms due to the process per se*

Spitting of blood  
Sputum  
Frequent and protracted colds (tuberculous bronchitis)  
Pleurisy (tuberculosis of the pleura)

*Malaise* (discomfort) is defined as a feeling of general discomfort or uneasiness, and an out-of-sorts feeling, often the first indication of clinical tuberculosis. This condition may be due to processes other than tuberculosis: however, it very frequently accompanies this disease and is a result of the toxemia.

*Lack of endurance.*—Many patients complain

of experiencing great difficulty in continuing their work toward the end of the day. The beginning of this lack of endurance may date from some fairly definite time in the past, such, for example, as following an attack of influenza, scarlet fever, or a period of unusual stress and strain. Again it may come on insidiously and increase to such an extent that the patient is unable to endure more than a small part of a day's work.

*Loss of strength.*—The muscular system also becomes affected by the toxemia so that the patient finds he is no longer able to manifest his original strength. Many patients state that they are unable to lift the same load or do work requiring the same strength that they did easily in former years.

*Nerve instability.*—Not infrequently the toxins very definitely affect the stability of the nervous system. Patients become irritable, and their attitude toward people and life itself changes. Persons who have been happy and congenial may become somewhat depressed and find it impossible to get along with their relatives and best friends. This state of mind may become so bad as to make the services of private duty nurses or institutional treatment imperative. Others develop changeable views, and, although they have seemed satisfied with their locations and stations in life, they develop a desire to move from place to place, frequently changing occupations.

*Diminished digestive activity.*—Not infrequently one of the earliest symptoms and in many cases one of the common symptoms is found in digestive disturbances. The appetite may become very poor, constipation may develop, and flatulence appear. The patient complains of "general indigestion." If these symptoms are the first manifestations of a pulmonary tuberculosis, the patient may seek the services of a gastro-enterologist and unless a careful examination is given, including examination of the chest, there may be made an attempt to treat a digestive tract which has no organic lesions, but whose physiology is disturbed because of tubercle bacilli toxins stimulating the sympathetic system. These symptoms may appear intermittently. Moreover they may be extremely severe in one case and very mild or even absent in another. Such patients placed in bed and treated for pulmonary tuberculosis lose all of their gastro-intestinal symptoms in a short time because of the disappearance of toxins from their tuberculous lesions. Again, a patient may notice a very definite increase in the appetite from the beginning. This may be due to the increase in basal met-

abolism or to the lack of proper absorption and assimilation of foods. Gastro-intestinal disturbance is sufficiently important to justify careful examination of the lungs and other parts of the body for an active tuberculous lesion.

*Increased metabolic rate.*—The increase in the metabolic rate in some cases apparently is due to the stimulation of the thyroid gland by the toxins. This subject is more fully discussed under the subject of foods.

*Loss of weight.*—Along with impairment of the digestive functions there usually comes a loss of weight. It is believed also that endocrine disturbance resulting from toxemia also has a definite effect upon the weight. To be of much significance, weight loss must be quite rapid. A loss of considerable weight over a period of several years may have no significance as far as tuberculosis is concerned, whereas loss of several pounds during the last few weeks or months should always arouse one's suspicion. One must not confuse so-called underweight with loss of weight since many persons in good health are always below the weight regarded as the normal average for age and height. Where possible, it is best to compare the present weight of a patient with previous weights. Pottenger says: "It is particularly important for those who are attempting to diagnose early tuberculosis to bear in mind that both men and women attain a maximum weight for their early years when about eighteen or twenty years of age. After holding this weight a year or two, they will fall back five, ten, and sometimes fifteen pounds, and then hold this as their normal weight until after the third decade has been reached. It is very important to bear this in mind when taking histories, for it would be manifestly erroneous to consider this maximum as the normal weight or this loss as pathological."

*Increased pulse rate.*—The increased basal metabolism, together with the stimulation of the sympathetic system and the increased function of the suprarenal glands, tends to increase the pulse rate. Obviously the toxemia is not the same at all times; therefore, the pulse rate varies considerably, being rapid at times and normal or even subnormal at other times. Slight excitation on the part of the patient tends to increase the pulse rate more than in normal persons. In view of the individual variation in the pulse rate in healthy persons it is often necessary carefully to study it before deciding in a given case. Generally speaking, however, one does not speak of the rate being accelerated unless it is persistently ninety or above for men



and ninety-six or above for women.

*Night sweats.*—In patients suffering from considerable toxemia night sweats may occur quite frequently. There are causes of night sweats other than the toxemia accompanying tuberculosis; nevertheless, night sweats should always make one think of tuberculosis. A true night sweat occurs usually in the after part of the night while the patient is sleeping soundly. On awakening the night clothing and sometimes even the bed clothing are wringing wet. Such sweating should never be confused with slight sweating of which some patients complain soon after retiring.

*Fever.*—A very common symptom appearing in tuberculous patients is elevation of temperature. The cause of fever has been a subject of much speculation. Many believe it is a protective mechanism against infection. Crile states that, "as to the mechanism which produces fever we postulate that it is the same mechanism as that which produces muscular activity." Muscular activity is produced by the conversion of latent energy into motion, and fever is produced largely in the muscles by the conversion of latent energy into heat." Pottenger says, "Rise in temperature can either be due to bacillary toxins or to the absorption of other protein from the inflammatory process in the lungs itself. It is unquestionably due partly to some increase in metabolic activity resulting in increased heat production, but also to an interference with elimination of heat when formed." He believes the increased production of heat results from the destruction of toxins by chemical action, and that there is decreased heat elimination because of vasoconstriction from toxemia.

The patient's temperature is so important in diagnosis that one must study it carefully, preferably in graphic form. If there is any question as to the presence of fever the temperature should be taken every two hours throughout the twenty-four hours for a period of a few days. This is important because not all patients have their temperature elevations at the same time of day despite the common opinion that the fever always appears during the afternoon. In many cases the fever does occur in the afternoon, but in others there may be no elevation of temperature except for a short time in the after part of the night or in the morning hours. If the temperature is taken by mouth the thermometer should be held under the tongue for ten and preferably 15 to 20 minutes. To be of any significance it must be 99° F. or more for men and 99.6° F. or more for women.

It must be borne in mind that elevation of

temperature may not occur every day, but that it may be present for a few days then absent for a while. Therefore, a considerable period (even three or four weeks or more) of observation of the temperature may be necessary. There is usually a slight elevation of temperature associated with the menstrual period. This may appear a week or even two weeks before the period, or it may appear with and continue through the period. This rise in temperature must not be mistaken for that caused by tuberculosis.

Although there are many conditions causing fever, one must always bear in mind that a persistent daily elevation may be due to a tuberculous process.

*Hoarseness.*—Tuberculous patients often complain of huskiness or hoarseness of the voice when no lesions exist in the larynx. This symptom may be present over a long period of time, or it may occur intermittently. It is produced reflexly by stimuli from the region of the tuberculous lesion passing to the larynx by way of the inferior laryngeal and the superior laryngeal nerves. In all cases of hoarseness the larynx must be examined carefully to make sure that tuberculous lesions do not exist there. If no lesions appear it does not suffice to blame the tonsils but a careful chest examination is indicated.

*Tickling in the larynx.*—Many patients with cough insist that their entire trouble is in the throat. They feel no pain or other sensation within the chest, but have an almost constant tickling in the throat. This symptom is also produced reflexly by stimuli originating in the chest, but reaching the larynx by way of the superior laryngeal nerves, which carry sensory fibers to the larynx.

*Cough.*—Cough is often the result of an effort to relieve the tickling sensation in the larynx. In early cases of tuberculosis the cough may be non-productive. This fact, together with the sensation in the larynx and the absence of unpleasant sensations in the lungs, directs the attention of the patient and too often of the physician from the lungs. Many times physicians investigate the entire upper respiratory tract with the hope of finding a cause for the tickling in the larynx and the cough. Frequently one sees patients who, because of these symptoms, have had submucous resections, nasal spurs removed, tonsils and adenoids removed, or a long course of medical applications to the larynx without ever having had the chest carefully examined. During all this time the pulmonary condition has

progressed and often to a hopeless stage before it is discovered.

Pottenger says that cough is "a very complex reflex" consisting of (a) a sensory disturbance in the larynx through the superior laryngeal nerves, (b) a closure of the glottis through the superior and inferior laryngeal nerves, (c) a contraction of the expiratory muscles (internal intercostals and abdominal) through the dorsal spinal nerves, and (d) relaxation of the inspiratory muscles (diaphragm, external intercostals, intercartilaginous, and muscles of the shoulder girdle) through the cervical and dorsal spinal nerves."

*Digestive disturbances (hypermotility and hypersecretion).*—Besides the gastro-intestinal symptoms described as a result of toxemia there may be symptoms produced reflexly. In such cases the appetite is definitely increased, the digestive juices flow in superabundance, and the peristaltic action is increased.

*Circulatory disturbances.*—As a result of toxemia the heart action is found to be increased in many cases. In other cases we find as a result of reflex stimuli over the vagus there is produced inhibition of the heart action. This symptom may be present at any stage of the disease, but is most frequently seen in the more advanced conditions. Patients with this symptom will frequently pride themselves on their very slow pulse rate, there being a popular view that active disease always increases the pulse rate above normal.

*Chest and shoulder pains.*—Patients with pulmonary tuberculosis very frequently complain of pains often described by them as neuralgia or rheumatism about the shoulders and chest. It has been pointed out that these usually are reflex pains carried by the cervical nerves to the muscles and superficial tissues of the shoulder or they may be due to neuritis. The intercostal nerves may become involved through inflammation in the parietal pleura extending to them. Too often the physician looks lightly upon the complaint of chest pains on the part of tuberculous patients. Indeed this symptom is so important that one should always make special inquiry for it when taking the history of a new patient. On the other hand one must constantly bear in mind that not every chest or shoulder pain is due to tuberculosis of the lungs.

*Flushing of the face.*—Anyone about an institution for the tuberculous has been impressed with the flushed condition of the cheeks of certain patients. The flushing may appear only at certain times of the day, and it may be unilateral

or bilateral, depending upon whether the pulmonary lesions are in one or both lungs. It is always on the side of the lesion in unilateral pulmonary cases and more marked on the side of the more active disease in bilateral cases. This condition usually is seen in patients suffering from rather advanced pulmonary disease. In early cases the patients may complain of a burning sensation of the external ear or the side of the face without the appearance of flushing. I have seen a patient who stated that the right side of his mouth burned at certain times during the day, and examination revealed a slight but active tuberculous process on the apex of the right lung. Therefore, a burning of one ear or any part of one side of the face may be a significant symptom and lead to a diagnosis before flushing of the face appears. The burning and the flushing are due to dilatation of the blood vessels to the regions flushed, produced reflexly by the stimuli passing upward over the vagus and peripheralward over the fifth cranial nerve. The red faces of patients who come from the cold outside where they spend a considerable part of their time to the warmer inside of rooms, must not be confused with the flushes referred to.

*Spitting of blood.*—The spitting of small blood streaks may be of little or no significance but if a patient spits as much as a dram of blood at one time it should be regarded as a hemorrhage from the lungs until all possibilities of lung lesions have been duly and carefully considered. There are causes of hemorrhage from the lungs other than pulmonary tuberculosis, such as acute pulmonary infections and heart lesions, but these are seldom found. Indeed it may be stated that not less than 95 per cent of pulmonary hemorrhages are due to tuberculosis of the lungs. Frequently we see patients who give histories of hemorrhage a few months or even a year or more before reporting for examination. They state that upon consulting their physicians they were told that a bleeding point was found on a tonsil or in some other part of the throat, or that the bleeding was considered due to pyorrhea and on this supposition they were treated medically or had the tonsils removed. No further examinations were made, and no other treatment instituted. With a sense of security in the belief that the cause of bleeding had been removed they went about their daily tasks with undetected tuberculous lesions slowly but surely advancing.

Hemorrhage may be the *first manifestation* of a tuberculous lesion. Indeed the lesion may still be so small as to produce no physical signs to the stethoscope. This is contrary to the view



held by many, that only advanced cases of tuberculosis have pulmonary hemorrhages. On the other hand many patients pass through all the stages of tuberculosis to death without a trace or suggestion of hemorrhage. Therefore, the absence of hemorrhage does not rule out pulmonary tuberculosis. When hemorrhage from the lung occurs it is so frequently caused by pulmonary tuberculosis that one must agree with Pottenger, when he says: "Blood spitting is more accurate in diagnosis than the Wassermann reaction."

*Sputum.*—In very early tuberculosis the patient may complain of a dry cough. He may say no sputum is raised. Even in such cases one should require that all sputum be collected for two or three days and be submitted for examination. Sputum usually is present in early cases, but often it is in such small amounts, so thin and clear, and so much resembling saliva that the patient's attention is not attracted to its presence. As time passes, however, the sputum increases in amount, gets thicker, and begins to present a slight yellow or green tinge. When the pulmonary process has become far advanced huge amounts of yellow and green sputum may be expectorated.

*Frequent and protracted colds.*—When a history is given of frequent "colds" which "rattle" in the chest and persist for a long time, this should be looked upon with suspicion. Patients will often state that they begin to have "colds" in the fall and are not entirely free until spring, while in others the "colds" are frequently in summer, as well as in winter. Very frequently it is found that such "colds" have a tuberculous background. They may be mild or they may be severe enough to produce fever and other symptoms of toxemia. Such frequent or persistent colds should be carefully inquired into. If tuberculosis is already present it should be detected and treated, and if not present the causes of the symptoms should be eliminated to prevent the resistance of the body becoming so reduced that tuberculosis may develop.

*Pleurisy.*—Like hemorrhage, pleurisy is a very important finding in the diagnosis of tuberculosis. To be sure there are causes other than tuberculosis, but every pleurisy not accompanied by an acute infection should be regarded as of tuberculous origin until proved otherwise. Like hemorrhage, again, pleurisy may be the first manifestation of tuberculosis. I have recently treated several patients who stated that they felt per-

fectly well and had never had better working capacities until suddenly and without warning excruciating pain developed in one side of the chest. After two or three days the pains subsided, and examination revealed the presence of extensive pleural effusion. Further examinations revealed the presence of tubercle bacilli. Too often in diagnostic work such pleurisies are not given the significant place they deserve, but are put somewhat into the old classification of "idiopathic" pleurisies. Now that we know of the very high percentage due to tuberculosis we are safe in designating them nearly all as suspected tuberculous pleurisies until we can prove them to be of other origin. The symptoms of such tuberculous pleurisies soon subside and the effusion absorbs, the patient again feels well, and is inclined to return to work. Unless warned that treatment is essential he may work one month, three, five, or even ten years before clinical tuberculosis overcomes him. Some heal spontaneously and never relapse but a high percentage will relapse sooner or later. The advice to one who has had a pleurisy with effusion should be the advice given to one who has had tuberculosis.

Besides being the first manifestation of tuberculosis, pleurisy may accompany a tuberculosis of the lung at any time. Therefore, the patient who complains of considerable pleurisy from time to time should be examined carefully for present pulmonary tuberculosis.

*General consideration of symptoms.*—It is obvious that many of the symptoms of tuberculosis also are symptoms of other diseases. Moreover, it must be understood that not all of them appear in every case of pulmonary tuberculosis, nor is every one that does appear present all the time. They may come and go. This is easily understood when one understands that tuberculosis is a disease of remissions and exacerbations, that the toxemia is not the same at all times, indeed at times it is absent while at other times it is very marked. Hence the irregularity of symptoms. Attention must be called to the fact that there is no symptom or group of symptoms that is pathognomonic. In other words from symptoms alone one is rarely justified in attempting a diagnosis. However, after one has compiled all available evidence and wishes to arrive at a definite diagnosis considerable weight must be allowed the symptoms in the evaluation of the data.

(To be continued)

## PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

Meeting of December 8, 1926

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, December 8, 1926, at 8 P. M. Dinner was served at 7 P. M.

The meeting was called to order by the vice-president, Dr. John E. Hynes. There were 21 members and one visitor present.

Dr. John E. Hynes read the report of the Committee appointed to draw up resolutions on the death of Dr. L. B. Baldwin, an honorary member of the academy.

Louis Benedict Baldwin was born October 27, 1872, and died October 24, 1926. He graduated at the University of Minnesota Medical School in 1897. He was honorary member of the Academy of Medicine since 1911. He served his internship at the City and County Hospital, St. Paul, in 1897-98, and practiced medicine in Cando, N. D., for two years and became Assistant Superintendent of the Hospital for the Insane at Jamestown, N. D.

From this time until his untimely death he was engaged in the problems of hospital administration. In 1910 he was elected Superintendent of the University Hospital and held this position until his death; also serving as Superintendent of the Miller Hospital for two years.

During the late war Dr. Baldwin was stationed in the Surgeon General's Office, first as Captain and later as Lieutenant Colonel.

It is particularly to be regretted that Dr. Baldwin had to leave on his pilgrimage in these rather trying hours for the medical profession, as he stood always on the side of right and was fearless and outspoken in condemning chicanery and intrigue whether within or without the medical fraternity. Our profession has much need of such, indeed.

To those who knew him best, his rather brusque manner was nothing but a cloak to hide an inner sensitiveness, and he was essentially social—an apostle of the theory that man is born to live a life in the fellowship of man—and the genuine regret and grief which was manifested when his many friends heard that Mr. Steadfast-for-Truth had been served with a summons was evidence of the respect and high esteem in which he was held.

No finer example of beautiful, devoted, sustaining helpfulness was ever witnessed than that of his wife during the days of his impaired health.

The Committee: JOHN E. HYNES, Chairman  
W. A. JONES  
J. T. CHRISTISON

The scientific program of the evening consisted of the following case reports.

Dr. A. R. Colvin (St. Paul) reported a case of large osteoma of the pelvis removed by operation. (Specimen shown.)

The patient from whom this bone tumor was removed was 46 years of age, married, and the mother of twelve children.

The tumor was first noticed fifteen years before its removal. It had caused comparatively little trouble even during pregnancy. Lately, however, because of its prominent position it was subject to trauma, and the skin over it became ulcerated, and she begged to have it removed, saying that she had been unable to get any one to consent to operate on it. I also refused, but on her insistence I finally consented.

The tumor, slightly larger than an adult's head, had its origin from the crest of the ilium.

Because of the nature of the numerous embryological developments taking place in the pelvic region, tumors of the pelvis are of a much varied character, apart from these congenital anomalies and tumors. Neoplasms of various kinds are of course common, particularly those of mesoblastic origin. The presence of many points of ossification lends an opportunity for wandering cartilaginous elements. Osteomata are quite common. This particular tumor seems to be a pure osteoma, having structure corresponding to spongy bone. Whether it belongs to the type of cartilaginous exostosis, I cannot say, except that it seemed rather to grow into the bone than out from it. The crest of the tumor corresponded to the crest of the ilium. Exostosis cartilaginea as represented by the lantern slides usually have a pedicle, although they may be sessile, and are usually capped with cartilage and stop growing when ossification of the center—to which they are related—becomes complete. If situated where muscles play over them, they usually have a bursa over their summit. This bursa may undergo all of the changes seen in the bursæ generally. Inflammatory changes usually require the removal of the exostosis with the bursa.

The nature of the base of the exostosis or osteoma is an indication as to the ease or difficulty of removal. In this case the base represented the ilium just above the acetabulum. Because of the overhanging position of the tumor, it could be approached only from behind, and then in the dark. By separating the fibers of the gluteus maximus up to the crest, a chisel could be driven down to the base and then, turning it forward, driven by a sense of touch through to the anterior aspect of the bone, and the tumor could then be broken off. A dissection of the gluteal and abdominal muscles was then made; that is, they were shelled off the tumor externally and internally, and when this was done the peritoneum was exposed to view although not opened. The two sets of muscles, gluteal and abdominal, were then sutured together and the large wound closed, healing taking place without infection.

The patient was able to do her work as a housewife later, and seemed to suffer very little disability because of the loss of her muscular attachments.

Dr. A. E. Benjamin (Minneapolis) reported two cases:



**CASE 1.**—Multilocular pseudomucinous cystadenoma of the ovary and associated dermoid cyst of the ovary.

Mrs. M. B., female, aged 48. Her chief complaints were enlargement of the abdomen with discomfort and pressure; pain under the left costal margin, which radiates to the back only at times; palpitation; frequency and difficulty in holding urine; slightly nervous.

Her menses began at the age of thirteen, periods regular, duration three to five days, no dysmenorrhea. She has two children, aged twelve and thirteen. Normal deliveries, no miscarriages. Her past history is virtually negative.

The patient was examined a year ago by another physician, and there was no sign of the present trouble. She was again examined in August and September, and fairly large cysts, possibly fibroids, were found. The abdomen is tense, fairly symmetrical, enlarged, and very prominent. Dullness extends three and one-half inches above the umbilicus and down to the pubes, filling the whole lower abdomen. The uterus is small, about normal size, freely moveable, and the mass is separated from it. There is little or no fluctuation of the mass.

X-ray plates show a very large globular mass occupying practically the entire left four-fifths of the abdominal cavity. The mass appears to arise from the pelvis. It is of uniform density throughout, suggesting that it contains fluid material. Colon injection with barium shows definite stasis in the sigmoid where there appeared to be moderate compression. The transverse colon is pushed upward by the mass, which also overlaps the descending colon anteriorly to it.

Conclusions: Abdominal mass, probably ovarian cyst.

Operative findings: A double cyst on the right side, one containing one and a half gallons of thick gelatinous substance similar to that in dermoid cysts. This cyst was one foot in diameter. The other cyst was about one-fourth as large, adherent to the appendix. There was one cyst on the left containing about twelve ounces of similar fluid and involving two-thirds of the left ovary. This cyst was adherent to the bladder. The appendix was short, club-shaped, and congested. The gall-bladder was practically normal. At operation (Dec. 8, 1926) the cysts were removed, also the greater part of the ovaries and about three-fourths of the tubes. The appendix was also removed. The patient made a good recovery.

There is a very good description of such cysts in "Hertzler's Treatise on Tumors."

Microscopic appearance: Lined with columnar epithelium, with the nuclei lying near their base. Degeneration and exfoliation were found in the cyst contents. The cyst wall showed a layer of loose connective tissue with large vessels, and external to this a layer of dense fibrous tissue with few nuclei. Also a layer of flattened epithelial cells. Papillary projections within the cyst,—epithelial prolongations and proliferations of the fibrous tissue of the cyst wall.

**CASE 2.**—A case of postoperative abdominal adhesions, cholecystitis, cholelithiasis, with persistent hiccough.

C. O. O., aged 44, male, married fourteen years, Swedish, hotel clerk.

Diagnosis: Postoperative abdominal adhesion; cholecystitis, cholelithiasis, and persistent hiccough.

Chief complaints: gastric distress, belching, pyrosis, constipation, nervousness, and fatigue.

As a child he had had measles. Had been vaccinated.

Operations: Appendectomy in 1906, abdominal adhesions in 1915, repair of postoperative hernia in 1920, complete repair of hernia in 1921, tonsillectomy in 1923, and repair of postoperative abdominal hernia in 1926.

The patient had sinusitis. The heart was somewhat enlarged, and there were palpitation and dyspnea. The patient has had some gastric disturbance, gas pains, pyrosis, and eructation; is constipated; and has to be careful of food. The skin is sallow. The heart is enlarged; blood pressure is 110/80. The abdomen shows tenderness over the right costal margin, some rigidity, and several scars.

X-ray plates of the chest show the heart and lungs negative. Plates of the gall-bladder before and after Cole-Graham dye show one definite round calculus shadow in the region of the gall-bladder; definite evidence of pathological gall-bladder with at least one stone. Plates of the nasal accessory sinus show a round dim shadow in the lower part of the left maxillary sinus. The remaining sinuses are clear. Conclusions from sinus plates are that there is localized involvement at the lower part of the left maxillary sinus—mucocoele. The lower jaw is normal.

Laboratory examination: urine, normal; hemoglobin, 90; Wassermann, negative.

Operative findings: postoperative hernia; intestinal adhesions; loop of small intestine adherent to the abdominal wall; also omental adhesions.

Second operation: cholecystectomy. Loops of small intestine were kinked up and adherent near the upper and central line. The omentum was adherent to the duodenum and to the gall-bladder. There were bands of adhesions extending from the gastric hepatic omentum to a loop of small intestine over the stomach. The gall-bladder was small, and very adherent to the surrounding structure. A stone  $\frac{3}{4}$  of an inch in diameter was found way down in the end of the cystic duct. A few small stones were in the duct. One stone was ulcerating through the wall of the fundus.

The course after the first operation was negative except for fever, which was due to sinusitis or gallstones and cholecystitis.

After the second operation there was persistent hiccough. Hiccoughing stops for short intervals under sedatives but returns. There is some vomiting bloody serum from irritation. Nearly all known remedies have been tried to stop the hiccoughing, but with little or no results. Drainage (Penrose) still present attached with plain catgut, to the stump not yet absorbed. Temperature, 99° to 100°. Pulse, 80 to 95.

Dr. Wallace Cole (St. Paul) reported cases and showed numerous lantern slides of operations in cases of paralytic feet.

Dr. E. M. Jones (St. Paul) reported cases of phrenicotomy for pulmonary tuberculosis. X-ray films were shown.

#### DISCUSSION

DR. JONES: Undoubtedly there is a field for this type of work, particularly in cases where there is a lower lobe lesion. It can be done without any particular difficulty.

DR. ULRICH: I am glad Dr. Jones brought up this question of phrenicotomy. I think it is the right direction we are taking in surgery of the lung. I heard Dr. Yates talk about this some time ago. Tuberculosis of the lower lobe is a very uncommon condition. He mentioned conditions in the lower lobe which may be very well treated along these lines. He also brings out that phrenicotomy does not put at rest the lung tissue. He claims that there is improvement in the circulation, and thereby he gets healing. That is his argument for changes in intrathoracic pressure. In the last case Dr. Jones showed, I think the reason that there was no displacement of the mediastinum was because it was fixed. If you have a fixed mediastinum, your phrenicotomy will not push the heart over.

We used to think that bilateral paralysis was a lethal condition. That has been shown to be not so by double phrenicotomy. Recently Lemon has produced double phrenicotomy in dogs, and he defies any one to pick our phrenicotomized dogs from the non-phrenicotomized dogs by their activities.

Dr. J. T. Christison (St. Paul) reported a case of actinomycosis of the lung and adrenal.

The patient, A. J., a boy eight years of age, was admitted to the Miller Hospital on September 20, 1926, complaining of cough, fever, and rapid respiration. At the age of three months he had bronchitis; at the age of eight months he had a cough with pneumonia; and at the age of five years he had pneumonia with a cough, and has never been well since. In July, 1925, Dr. Geer sent him to the preventorium because of weakness and anemia, but he did not improve there as he should have. On September 17, 1926, an abscess on his back was opened and shortly after that a diagnosis of pneumonia was made, and he was sent in to the Miller Hospital. There the physical examination showed rapid and somewhat labored breathing, with diminished expansion on the right side. On the left side there were coarse breath sounds but no dullness, but on the right side there was dullness below the level of the 6th rib, and bronchophony at the right base. For a time the lung condition seemed to begin to clear up, but it again grew worse, and he grew gradually weaker until death, on November 17, 1926.

The urine was negative; the sputum was large in amount, but no tubercle bacilli were seen. The hemoglobin was 45 per cent, the red count 3,100,000, the white count 15,500, and the differential was 66 per cent polymorphonuclears, 32 per cent lymphocytes, and 1 per cent eosinophiles, on October 2, 1926.

The x-ray diagnosis on October 4, 1926, was "bronchopneumonia and pleurisy," but on October 25 it was "advanced tuberculosis."

The temperature was very irregular and varied from 99° to 104°. The pulse was also irregular and varied from 120 to 170.

Pathological report: The body is that of a poorly developed and emaciated male child with a length of 124 cm. There is no rigor, lividity, edema, cyanosis, or jaundice. On the back just to the right of the spine and just above the top of the sacrum is a small opening in the skin covered with a brown crust. When the crust is removed no pus is visible, and a probe extends only into the subcutaneous tissue with no communication with any cavity or pus pocket.

The anterior abdominal wall is very thin with practically no subcutaneous adipose tissue. The muscles are pale and flabby. In the peritoneal cavity are no fluid or adhesions, but under and behind the liver is a thick layer of yellowish-white fibrin. The appendix is unusually large, but hangs free and shows nothing of interest.

Both pleural cavities are entirely obliterated by firm, fibrous adhesions which are broken with difficulty. No fluid is seen.

The pericardial cavity shows only a few drops of clear yellow fluid.

The heart weighs 120 gms. The muscle is pale in color and flabby in consistency. Gross sections show the walls of both ventricles to be thinned and the chambers to be dilated and unusually large. The valves and endocardium, are smooth and shining and show nothing of interest. The coronaries are patent and present smooth inner surfaces. The root of the aorta is smooth and shining.

The right lung weighs 315 gms. and the left 400 gms. Both are very large and show over the external surface many small nodules measuring about 3 mm. in diameter. Gross section shows the main substance of the lung to be soft and feathery in consistency, and scattered throughout it are small areas which measure 3-5 mm. in diameter. Many of these are firm and white, but the greater number are filled with soft, thick, greenish pus, and when this is removed there remains a tiny smooth-walled cavity. No definite caseous areas are seen. The lymph nodes along the hilus are enlarged to a moderate degree and dark in color, but they show no evidence of either caseation or calcification.

The spleen weighs 100 gms. The capsule is tense and dark red. Gross section shows the pulp to be firm in consistency and dark red in color.

The liver weighs 780 gms. The upper surface is bound to the diaphragm by a thick layer of yellowish-white fibrin, which is easily broken with the fingers. This extends over the top of the organ and underneath down toward the adrenal. The gall-bladder is much enlarged and a dead-white in color. Cross section shows the wall to be greatly thickened, pure white, and translucent. From the cut surface clear fluid exudes. The inner surface shows nothing different. The lumen is filled with clear, yellow bile. Gross section of the liver itself shows it to be pale in color with prominent red mottlings characteristic of a chronic passive congestion.

The gastro-intestinal tract appears to be normal throughout. The pancreas shows nothing of interest.



The left adrenal shows nothing of interest and is normal in shape and size. The right adrenal weighs 50 gms. It is enlarged to a marked degree and fluctuates upon palpation. Gross section shows the organ to be greatly enlarged by pockets of greenish-yellow pus throughout. The yellow tissue of the adrenal is present in thick trabeculae between the pockets of pus, and the entire organ is limited by a thick, fibrous capsule. No connection can be seen between this organ and the abscess of the back.

The kidneys each weigh 80 gms. The capsules strip readily, leaving smooth, shining surfaces. Gross section shows the markings to be distinct and the pelvis and ureters normal in appearance. The bladder and genital organs appear entirely normal.

The aorta is smooth and shining throughout.

Enlarged lymph nodes are found at the bifurcation of the trachea and along the bronchial tree, but all of these are dark in color and homogeneous with no evidence of either caseation or calcification. Slightly enlarged nodes are also found in the mesentery, but these are pink and show nothing of interest.

Culture of the heart's blood is negative.

Diagnoses:

1. Organized pneumonia of lung.
2. Actinomycosis of lung.
3. Actinomycosis of adrenal.
4. Localized fibrinous peritonitis.
5. Healed chronic pleuritis (bilateral).
6. Cardiac dilatation.
7. Acute cholecystitis.
8. Emaciation.

Microscopic sections show the following conditions:

**Lungs:** Many of the alveoli are empty and normal in appearance. Many are filled with new-formed connective tissue, which is evidently replacing the exudate in them. In other areas the alveoli are filled with pus cells but in yet other areas there are accumulations of pus cells which have replaced the alveolar walls and represent abscesses and in the center of some of these are distinct and typical ray fungi.

**Adrenal:** This shows large masses of pus cells in some areas, and in other areas there is extensive necrosis. Between these areas there are divisions or septa of connective tissue and in the centers of some of the pus cells are typical ray fungi.

**Heart, pancreas, and spleen:** These show nothing of interest.

**Liver:** The liver shows an atrophy of the cords around the central vein, and in the centers of these is a prominent deposit of brown pigment. At the periphery of the lobules there is a marked fatty change of the cords.

**Gall-bladder:** This shows a wall which is thickened to a very marked degree. This thickening is evidently caused by an edema, but scattered throughout, especially near the mucosa, are many lymphocytes and pus cells.

#### DISCUSSION

**DR. SCHLUTZ:** This is certainly a very rare case. Parasitic diseases are particularly rare in our section of the country. They are about the last thing many of us think of. I do not know what the experience is farther south, where, I believe, they

have a good many more cases than we have here. The *x*-ray plates remind me somewhat of plates I saw in Montevideo, South America. They have a great prevalence of hydatid cysts in that country. In the early stages of the disease they show some very puzzling *x*-ray pictures, which would make many of us think of tuberculosis, but the men down there, being familiar with conditions, will spot them very readily. They turn out to be hydatid cysts. At the time I was there, Dr. Morquio had an unusually large number of children who showed this disease in the chest in various stages. The cyst generally breaks into a bronchus, and the child recovers. The condition affects the head and lungs, and, less often, the liver. The brain cases are usually fatal, although a few have been reported as recovered. They think of hydatid cyst almost as the first thing, just as we think of tuberculosis first, due to the fact that they have so much of it. Sheep carry the parasite, and the shepherd dogs give it to the children.

Actinomycosis is a rare condition, I believe, in this part of the United States. Personally I have never seen a case.

**DR. ULRICH:** I had the pleasure of seeing these lungs at the Pathological Conference, and it is an extremely rare thing to have actinomycosis of the lung. Actinomycosis in cattle is a rather benign affair. In our medical cases we find actinomycosis is usually around the cecum and then into various parts of the body. To have it just in the lung is an extremely rare condition. Visceral actinomycosis is always fatal in human beings.

**DR. ZIMMERMANN:** I do not believe that actinomycosis is as rare as we are taught. Neither do I believe that local actinomycosis is necessarily very fatal. I have taken care of four cases of local actinomycosis in the past two years. Two were in the tongue, one with quite a large abscess at the base of the tongue, reaching down as far as the hyoid bone. Another was in the floor of the mouth, and the fourth was on the right side of the neck. This last one was quite a large, indurated mass covering an area of about 5 cms. transversely and 3 cms. perpendicularly. All of these people got well with even less trouble than with an ordinary local, suppurating infection. In no case was there any extensive excision, merely an incision so made that the exit was bigger than the bottom of the abscess; and the wound was packed with gauze soaked in tincture of iodine solution. Although these cases were recognized as actinomycosis, and treated with iodine and iodides given internally, it is not inconceivable to me that there must be a good many such cases not recognized, treated with simple incision and drainage, that might have gotten well.

**DR. CHRISTISON:** I have not had time to go through the literature, but a cursory examination does not show very much on actinomycosis of the lung in children. I am going to use this as a basis for future enlightenment on the subject.

**Dr. H. B. Zimmermann (St. Paul)** reported a case, and showed specimen, of carcinoma of the stomach in a woman who for three years had given a typical ulcer history.

## DISCUSSION

DR. HAMILTON: Was this a conjunction of two pathologic processes?

DR. HYNES: Had there been any loss of weight in the last few months?

DR. ZIMMERMANN: It seems inconceivable that the carcinomatous element of this lesion could have existed for a period as long as three years, it was such a small lesion; whereas, the ulcer history in this woman extended back for a period longer than three years. It is a fact that the woman had lost weight, but I may say that this was because she was afraid to eat and had almost starved herself to obviate pain.

Dr. H. L. Ulrich (Minneapolis) reported a case of carcinoma of the stomach (showing specimen), which could not be diagnosed during life.

This case is a direct antithesis to Dr. Zimmermann's case. His was a rapidly growing, very obvious tumor (cancer) of the stomach. Mine is a rapidly invasive, but microscopic primary tumor of the stomach.

Mr. C. H., aged 37; admitted to hospital April 4; and died April 27, 1926.

## Complaint:

1. Pain in lower thorax on both sides.
2. Pain in epigastrium after eating.
3. Pain in lumbar region.
4. Polyuria.
5. Sprained ankle.

There was no family history of tuberculosis or cancer.

The patient had "flu" in 1917 and an appendectomy in 1918. He was married; three children living and well. On December 26, 1925, the patient sprained his ankle, remaining in bed 3 weeks (ankle still swollen when he got up). On February 6, 1926, he reported to the dispensary, complaining of fullness and pressure in chest with sharp shooting pains on both sides. He had a gnawing sensation in the stomach one-half hour after eating. A heavy meal particularly brought this on; milk and toast did not provoke pain.

On February 13, 1926, he was put on ulcer diet with considerable relief. On February 19, 1926, he had pain in the lower abdomen; the pains were sharp and radiated through to the spine. On March 21, 1926, the pain in the lumbar region again became quite severe and kept the patient awake nights. Four days later the patient noticed the urine was red in color. Nocturia, three times; day, six times.

Complained of being constipated three days prior to admission, and passed black tarry stools with an enema.

Physical examination: Skin smooth and dry. Eczema over left arm and forearm. Sclerae are icteric. Tongue, papillae are somewhat smooth. There was emaciation of the thorax. Heart and lungs were negative. The abdomen was scaphoid shape; no masses were made out. The spine from the 10th thoracic is fixed; tenderness over the sacro-iliac joints.

## Laboratory findings:

Anisocytosis +++  
Poikilocytosis +++  
Polychromatophilia +++

	April 5	April 7	April 14	April 26
Hemoglobin	65% C. I. .89	47% (1.02)	33% (1.16)	23% (1.13)
Red	3,950,000	2,310,000	1,580,000	1,120,000
White	8,900	13,000	18,000	24,320
Polymorphonuclear	45%	68%	68%	84%
Lymphocytes	40%	19%	28%	11%
Monocytes	1%	4%	1%	4%
Eosinophiles	10%	8%	3%	1%

Nucleated reds ++

Color index indicates primary anemia.

Fragibility test, normal.

Gastric analysis: No free HCl.

Feces: Blood and pus.

Urine: Sp. gr., high; no albumin; sugar, negative.

April 26 Urine: first examination: reds 10-20; whites 1; bile and urobilin in urine on April 8, 1926; no biliary pigments after April 8.

Urobilin 1+.

Urobilinogen + once; otherwise negative.

Functional test of kidney 25%-22%; total 47%.

Blood chemistry: April 5 April 12

Urea—31.3

25.

Creatinin—1.7

1.3

Sugar—.112

.143

April 26: Cholesterol 476 mgm. per 100 c.c. Blood culture negative.

X-rays:

Stomach, negative.

Colon, colitis.

Chest: increase in vascular markings suggesting congestion.

Spine: Chronic hypertrophic arthritis of lumbar spine; chronic arthritis in sacro-iliac joint.

Skin: lichen chronica simplex.

Fundi, negative.

Neurologic examination, negative.

Diagnostic impressions:

1. Malignancy of the gastro-intestinal tract with metastasis to liver.

2. Pernicious anemia with superimposed streptococcic septicemia.

3. Hodgkin's.

Pathological findings: The liver is riddled with fairly large white irregular areas of metastasis. On the posterior surface of the stomach, near the greater curvature, the mucous membrane is puckered with a central healed ulcer. There is no induration of the muscular wall. Microscopically this ulcer proved to be carcinomatous. There was involvement of the regional lymph nodes, glands of the hilus of the spleen, gastro-hepatic ligament and retroperitoneal lymph nodes, especially around the spine; metastasis to the liver, pancreas, and lungs.

Conclusions: This case is striking from several angles: (1) He exhibited a rapidly developing anemia of a primary type (color index, high) without any evidence of hemorrhage, and no particular hemolysis. The hemolysis idea is emphasized because during the period anemia occurred there was a rapid disappearance of jaundice. (2) The gastric symptoms were first noted February 6, 1926, with pain in the lower abdomen thirteen days later, February 19. At this time invasion of the lymph glands along the spine must have occurred. (3) The acute infectious temperature curve, leucocytosis, with progressive anemia and no evidence of localizing symptoms. It must be added, however, that acute invasion of the liver by carcinoma can do this. (4) The rapid and extensive invasion from an almost microscopic lesion primary in the stomach.

CARL B. DRAKE, M.D.

Secretary



# THE JOURNAL-LANCET

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The Hennepin County Medical Society  
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## OUR LEGISLATIVE PROBLEMS IN MINNESOTA

There has been a good deal of communication with our Minnesota legislators, especially among the opponents of the Basic Science Bill, House Bill No. 452, and the question is how the opponents can be satisfied as to its value. It seems that the men of the different factions or cults are more or less in favor of the bill, in fact the chiropractors and osteopaths have been willing to accept it as a proper measure, while, of course, among the majority it is viewed with alarm and has been fought with all the weapons they possess, on the ground, principally, that it is discriminatory, that it is an effort on the part of the medical profession to get control of the healing art, all of which is no argument at all. It is to secure a higher grade of practitioners in the various cults and methods of healing. It was understood at one time that most of the men who were practicing osteopathy and chiropractic, after studying the bill carefully, believed it is a wise measure. As a matter of fact, it does not affect them at the present time, nor will it in the future, but it will affect all coming graduates in all methods of healing. Who could object to such a thing as that?

Another objection seems to be that the board who shall eventually examine applicants in the

basic sciences is to be composed of three University men, professors selected by either the Governor or the President of the University, or both—presumably disinterested people. Why that should be objected to is very curious for they have nothing to do with the practice of medicine; they are not interested in the favoring of one method of healing or another; and none of them object to a bill which improves the fundamental standing of an applicant who desires to practice.

The bill especially provides that after the applicant has passed this basic board, he may take his special examination if he chooses to practice osteopathy or chiropractic, that is, he need not indicate in any way that he is interested in a special department of healing, and no one objects to that at all so far as we can discover, at least no medical man objects to it.

It is impossible for the medical profession to regulate all kinds of practitioners, nor does it desire to do so, because the people demand something different, something they hope is new, and they probably will have it as long as time endures. But, if the basic medical act goes through, they will be assured that they will have better practitioners to deal with, they will be in far safer hands, and the favorable outcome of their disorder, whatever it may be, will be more assured.

The legislature has been flooded with letters, and it is possible these letters may do some good. But it occurs to us that the average legislator pays but little attention to this multiple supply of letters. He sees they are simply in opposition to something, and he probably does not pay much attention to them, any more than he pays attention to the letters which come from medical men. Yet it is perfectly proper and should be the duty of every doctor to see his senator or representative and explain to him, in the right light, what this means to the people at large. Of course, the basic medical practice act is nothing new. It is in operation in many states. It does not take away from any individual or group of individuals any of the rights now possessed by them under the provision of the law as it now stands and which has existed in its present form for more than twenty years. But it does provide for better administration of the medical practice act and is solely in the interest of the preservation of health and the lives of the people of our commonwealth. Hence this bill, or its equivalent, was endorsed and approved by the governor of the state of New York; and he states that the bill will protect the public from the exploitations of quacks and charlatans by

regulating the use of the title "doctor," and by prevention of fraudulent and deceptive advertising.

We hope some agreement can be reached by the various committees and the opposing forces. The Minnesota State Osteopathic Association has issued a letter in which it urges the osteopath to see and have a personal talk with the representative and senator for his district; they evidently expect that the Osteopathic Association will do everything in its power to call the bill a dangerous one. One of the prominent osteopaths went over to the public hearing, on Thursday, the seventeenth, and spoke very ardently against the bill. Doubtless many of the chiropractors have done the same thing. As a matter of fact, however, some of the better men have admitted that the bill was a good thing for the State of Minnesota, and consequently they would not be misrepresented or injured in any way by its passage.

Another curious cult has arisen, seeking State recognition, and they have prepared a bill (perhaps it has already been introduced in the legislature) called "A Naturopathic Proposition." They start their letter to the members of the legislature by the salutation "Your Honor:" The text of the letter is as follows:

"One of the ten commandments is 'Thou shalt not kill.' We do not need a gun to kill a person, but many times we could kill a person with the words 'Yes or No.' The enclosed copies of testimonials you will find are some of the hundreds and hundreds of patients whom we have saved from the grave in the last two years since this naturopathic hospital has been opened for the sick ones to be treated, and any time our Senate File No. 314 will come before you, I ask you to remember the words of this testament 'Thou shalt not kill.'

"The modern art of treating diseases is Naturopathy and is taking a very big part all over Europe. This method is based on the laws of Biology, and while we are applying this modern method in treating hundreds of patients who have been given up to die by any other profession or hospital, we are able to show a record for a period of two years and five months with not one death, but we have restored people to their health and to their duties again. Therefore, the writer is asking you, in the name of the ill and sufferers, to help us to pass this bill.

"I am sure you will do your Godly duty and am thanking you in advance for your kindness."

This is a visionary and more or less vicious attempt to enter the side door of medicine, and the bill should be promptly killed.

## THE ANTI-VIVISECTIONIST

There was a meeting of the Anti-Vivisection Congress in Philadelphia on October 18, 1926, it seems; at all events, a report was presented which announced that an attempt to secure anti-vivisection legislation would be made in six or eight states, of which Minnesota is one. God help the anti-vivisectionist! He knows so little that he ought to hunger for real information. He is trying to create a condition which would take us back years in scientific investigation and he is feeling more sorry for a black rat than he is for the life of a human being, a child, an individual who has suffered from a chronic disease and eventually has been cured because science has been able to locate with more accuracy the seat and consequently the relief of the disorder.

Perhaps this is not strange when one considers all the discord, the unrest, and the unhappiness of so many of these incompetents, these feeble-minded individuals who are trying to reform the world by some new method that they think they have just thought out. They are a dangerous set of people in a way, because they appeal to the uninformed, the uneducated, the ignorant, and those of the paranoid type, which covers such a large number of the people. There is a book called "There Ought To Be A Law," and evidently the anti-vivisectionist feels the same way, while on the other hand the medical profession feels there ought to be a law against these ignorant irritants who are trying to inform the people of something of which they know nothing and which will simply lead to dissension, discussion, and unhappiness. Consequently, there ought to be a law calling for the extermination of these many committees and associations that are trying to reorganize, reinstruct, and reconstruct the world that we live in,—something they have been striving to do for a long time. Doubtless a great many unnecessary bills are introduced into all legislatures, as, from time to time, the newspapers have printed some very curious and absolutely absurd bills. It might be well to recall that records in Philadelphia show a city ordinance dated 1843 prohibiting Philadelphians from taking a bath between November first and March fifteenth. Boston kept in line with a negative attitude toward bathing, and about the same time put into effect a city regulation that prohibited bathing unless authorized by a physician's prescription. The trouble is that physicians have trouble getting patients to take a bath, anyway!

It seems to us that our active reformer does more damage to the human race than does the



potential criminal; and as so little can be done or has been done for the criminal perhaps little can be done with the anti-vivisectionist. But let him show his head once and it is to be hoped that the legislature will block him at every angle.

### AMOS WILSON ABBOTT

1844-1927

Dr. Abbott, of Minneapolis, died on Sunday, February 27, after a brief illness. He was one of the oldest and most highly respected physicians in the Northwest and had practiced in Minneapolis over fifty years.

A full report of his life and work will appear in our next issue.

## BOOK NOTICES

**CLINICAL PEDIATRICS.** By John Lovett Morse, M.D., Professor of Pediatrics, Emeritus, Harvard Medical School; Consulting Physician at the Children's, Infants' and Floating Hospitals, Boston. Philadelphia and London: W. B. Saunders Company, 1926. Cloth, \$9.00 net.

This book is an excellent clinical study of the diseases of infancy and childhood and is especially suited for the beginner in pediatrics and the general practitioner. The book is, for the most part, a compilation of the author's personal experience and research in this field. There is very little attempt made to present methods of feeding and treatment which are in use in other parts of the country.

For one not ground in the percentage system of infant feeding the chapters on nutrition are not very instructive. There is very little theoretical discussion. Diagnosis and treatment are discussed in a clear and intelligent manner.

This book should prove to be a welcome addition to our pediatric literature.

—D. M. SIPERTEIN, M.D.

**THE THYROID GLAND** (Beaumont Foundation Lectures). By Drs. Charles H. Mayo and Henry W. Plummer. 83 pages, Cloth, \$1.75. St. Louis: C. V. Mosby Company.

The lecture by Dr. C. H. Mayo deals with the history, etiology, and geographical distribution of goiter; the anatomy, physiology, and biologic chemistry of the thyroid and parathyroid glands.

Dr. H. S. Plummer presents the foundation for his classification of goiter, the hyperthyroid stasis, the theory of dysfunction of the thyroid; the latter including the observations that led to the use of iodine, its method of operation and administration.

These lectures are intensely interesting and instructive. They offer authoritative and concise information concerning the present status of our knowledge of normal structure and function of the thyroid gland, and provide a working basis whereby its disorders, as exemplified by goiter and alteration of function, may advantageously be classified and treated.

—C. A. HALLBERG, M.D.

**THE MEDICAL CLINICS OF NORTH AMERICA.** (Issued serially, one number every other month.) Volume X, Number 1, (Philadelphia number, July, 1926.) Octavo of 260 pages with 24 illustrations. Per Clinic year, July, 1926 to May, 1927, Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company.

This issue, the Philadelphia number, is a very interesting one and full of excellent monographs. Articles on syphilis and cardiac disease predominate. Of the latter there is a most instructive article by Dr. Edward Weiss on the "Differential Diagnosis of Congenital Heart Disease." His classification of congenital heart disease is simple, and each type is fully discussed as to symptomology. He stresses particularly the fact that the two large dangers are infection and strain, and that, if these are avoided, the chances are good for long and healthy life, especially in the non-cyanotic group or, as he calls it, the arterial-venous shunt type.

A fine group of studies from the Chevalier Jackson Bronchoscopic Clinic is given by Dr. Gabriel Tucker. The phenylhydrazin treatment of polycythemia vera is discussed by Dr. Simon S. Leopold.

Many other articles appear by well-known men of the day, making the whole volume worth while reading.

—A. E. CARDLE, M.D.

## MISCELLANY

### SUPREME COURT OUSTS SOUTH DAKOTA FOREIGN DIPLOMA MILL

"National University of South Dakota" Granted Law and Medicine Degrees Abroad,—Complaint is Made by Consular Representatives in U. S.

A "diploma mill" or university without building and faculty, yet issuing degrees in law and medicine and incorporated under the laws of South Dakota, has been dissolved as a corporation of this state by the supreme court.

The unique institution was known as the "National University of South Dakota," with headquarters at Huron. According to its charter Dr. Carl Hildebran, of Berlin, Germany, was to be its life president.

#### DEGREES IN THIS COUNTRY

Dissolution of the corporation was ordered by the State Supreme Court as the result of complaints by consular representatives of Italy and Germany.

The buildingless "university" is alleged to have issued numerous "degrees" of law and medicine in European countries, and in some states of this country, as well. Action to call halt to its work, however, was not brought until investigations were made by authorities in the foreign countries.

#### INCORPORATED IN 1923

Inquiries into its activities are said to have shown that there were no plans for erection of buildings or other developments to give the corporation the standing of a university.

Articles of incorporation were issued at the state capitol on November 28, 1923, after an application for a charter had been filed by W. A. Johns, Huron attorney. It was explained that the work of incorporation was undertaken by him in the usual course of business as the representative of outside concerns.—*Daily Capitol Journal*, Pierre, S. D.

## NEWS ITEMS

Dr. C. J. Martinson has moved from Stillwater to Wayzata.

Dr. Harold C. Stratte has purchased the practice of the late Dr. Wiseman at Pine City.

Dr. A. G. Noble, of Howard, S. D., announces his intention to move to McMinnville, Oregon.

A reorganization of the staff of the General Hospital of Minneapolis is under consideration.

A public hearing on the "basic science bill" before the Legislature of Minnesota was held last month.

Dr. John Butler, of Minneapolis, has resumed practice after a serious illness which incapacitated him for the past six months.

Dr. B. B. Sedlacek has taken over the practice of Dr. Charles R. Thompson at Oberon, N. D., who recently moved to Grafton, N. D.

Dr. L. A. Sukeforth, of Duluth, heads a committee appointed by the St. Louis County Medical Society for the prevention of diphtheria.

Dr. E. F. Jones, of Oehlrichs, S. D., the new Government physician for the Indian Agency, has moved to Pine Ridge, S. D., to continue his work.

Dr. W. H. Salter, of Duluth, died on February 18, at the age of 64. Dr. Salter was a graduate of the N. Y. University Medical College, class of '92.

Dr. John P. Hawkinson, a 1925 graduate of the Medical School of the U. of M., who practiced a short time at Osakis, has located in Kensington.

Dr. H. D. Newby, of Rapid City, S. D., who has been attending eye, ear, nose, and throat clinics in Omaha and Chicago for some time, has resumed his practice.

Dr. Daniel Geibe, a pioneer physician of Groton, S. D., recently died in Detroit, Mich. An obituary notice of Dr. Geibe will be published later in these columns.

Dr. David J. Jacobson, formerly at Russell, has taken over the practice of Dr. R. Schwyzer, of Blackduck, who moves to Minneapolis, as already announced in these columns.

The cancer clinic to be conducted at the Elliot Memorial Hospital of the University of Minnesota was opened last week, and patients will be received three days of the week.

Dr. H. J. Thornby, of Moorhead, will leave for Europe early in May to attend postgraduate clinics in Liverpool, London, etc. He will also attend the International Rotary Convention in Belgium.

Dr. E. C. Bagley, a 1926 graduate of the Medical School of the U. of M., who has been doing internship work at the Jersey City (N. J.) Hospital, has returned to the hospital for another year's work.

The South Dakota State Medical Association holds its next annual meeting in Huron on May 3 and 4. The County Health Officers' Association will hold a meeting at Huron on the preceding day (May 2).

Dr. George T. Baskett, Superintendent of the Willmar State Asylum, has resigned to accept a similar position in a state hospital at Wilkesbarre, Penn., after nineteen years of faithful service to Minnesota at St. Peter and Willmar.

The new \$200,000 hospital building of Dr. E. E. Webber at West Duluth is now ready for occupancy. The building is to take care of the patients in the hospital at Proctor. It is both a railroad and a community hospital.

A fifty-bed ward has been turned over to the South Dakota State Tuberculosis Sanatorium at Pierre, S. D., by the American Legion Auxiliary of the State, as just announced by Mrs. Marion Cramer, of Viborg, President of the Auxiliary.

Dr. William D. Lawrence, of Minneapolis, died on February 17 at the age of 74. Dr. Lawrence graduated from the Chicago Homeopathic College in the class of '79, and soon afterwards located in Minneapolis where he practiced until his death.

The contract for the Children's Pavillion at San Haven, N. D., was let to Moline Company of Jamestown, North Dakota, on February 18, the amount involved being about \$67,000. This building will be a well-equipped and valuable addition to the Sanatorium group.

An effort is being made to have the Veterans' Bureau Hospitals of the Twin Cities (the old Asbury in Minneapolis and the Aberdeen in St. Paul) retained by the Government for the care of veterans who cannot be received in the new Veterans' Hospital at Fort Snelling.

The Conference on Child Health and Parent Education to be held in Minneapolis on March 8-10 will be the greatest conference of its kind ever held in the Northwest, and every physician will find subjects of interest in the program, which was published in our last issue.



The Eighteenth Annual Meeting of the Minneapolis, St. Paul & Sault Ste. Marie Railway ("Soo") Surgical Association was held in Minneapolis on Friday and Saturday of last week. A program of sixteen papers was presented. Dr. A. A. Law, of Minneapolis, presided as president.

A nutritional expert and a neuropsychiatrist are to be added to the Student Health Service of the U. of M., beginning September 1. The student health service fee will be increased from \$6.00 to \$9.00 a year to cover the expense of the larger service which will cover the yearly examination of every student.

Dr. G. M. Williamson, of Grand Forks, N. D., recently attended the Federation of the State Medical Examining Boards and the Council of Medical Education of the A. M. A. He presented a paper before the Council on "Interstate Endorsement of Medical Licenses." Dr. Williamson is a member of both bodies.

Dr. R. C. Logeheil has returned from Europe, where he has been since last summer visiting the various clinical centers on the Continent, as well as England and the Scandinavian countries. He spent most of his time in Vienna, where he found postgraduate work to be the most thoroughly organized, and therefore easily obtained. He has resumed his practice at the Sivertsen Clinic in the department of Internal Medicine, of Minneapolis.

A bill was introduced in the North Dakota Legislature known as House Bill No. 231, purporting to regulate the management of public hospitals which are tax-free in North Dakota. The bill authorizes hospitals to adopt rules for the suspension of physicians and surgeons practicing in these hospitals and allowing chiropractors the same professional standing as regular physicians and surgeons. Action was taken on this bill on February 16, when the bill was indefinitely postponed.

Dr. Henry Waldo Coë, a pioneer physician of North Dakota, who practiced in Mandan and Valley City thirty years ago, died last month in Portland, Oregon, at the age of 70, where he conducted a sanatorium and edited *The Medical Sentinel*. Dr. Coë graduated from the Long Island College Hospital of Brooklyn in the class of '80, and soon went to Dakota to begin the practice of medicine at Mandan. He was the second president of the State Medical Association, following Dr. J. G. Millsburgh, who had occupied the position three years, and notice of whose death was published in our last issue. Dr.

Coe was an intimate friend of Theodore Roosevelt and accompanied him on several hunting trips.

#### Notice of Society Meetings

Hereafter THE JOURNAL-LANCET will publish a list of all the meetings of the various medical societies which meet in Minneapolis. For instance, there is a regular monthly meeting the first Monday in the month, and an evening meeting which begins with a dinner at six-thirty. We have four or five Wednesday noon meetings which begin at twelve-thirty with a luncheon and a scientific program from one to two o'clock. For example, at the present writing Dr. J. Stuart Pritchard, of Battle Creek, Michigan, delivered an address on "The Diagnosis and Treatment of Bronchiectasis," which was followed by "The Value of Bronchoscopy in Pulmonary Diagnosis," by Dr. Herman J. Moersch, of Rochester, Minnesota.

These noon meetings are particularly interesting as they do not consume any time with business affairs, that being left over to the regular monthly meeting the first of every month. The attendance at the noon meetings is not infrequently very much larger than that at the evening meetings, hence if any of our friends in the country who are in Minneapolis would like to attend a medical meeting, they will find the noon meetings of great value and will have an opportunity to meet medical men of Minneapolis and also to hear some good speakers. The program of February 23 was a particularly profitable one because of the speakers who were present, their manner of address, their clear enunciation, and the fact that they knew how to talk. Each man talked as if he were quite capable of filling the room without any trouble, a feature which is lacking in a good many medical speakers.

Programs other than that of the Hennepin County Medical Society, like those of the Clinical Society of Minneapolis, the Clinical Club, and other organizations, will be noticed as far as may be.

#### The Minneapolis Surgical Society

The regular monthly meeting of the Minneapolis Surgical Society will be held Thursday, March 3, at 8:00 p. m., in the library of the Hennepin County Medical Society, Donaldson Building, Minneapolis. The following program will be presented:

1. Case reports
2. Surgery in Gastric Ulcer.....Dr. Verne Cabot
3. The Injection Treatment of Varicose Veins by the Use of Sclerosing Solutions .....Dr. H. O. McPheeters.  
T. H. SWEETSER, M.D.  
Secretary

#### The Sixth District Medical Society of North Dakota

The first meeting of the Society of the year 1927 was held in the Lions Den at the Grand Pacific Hotel, Bismarck, February 8, 1927, at 7:30 p. m. Dinner was served to thirty. During dinner Dr. W. H. Porter, Senator, and Dr. P. O. C. Johnson, member of the House, gave short talks upon request of Dr. Griebenow, the President.

At 9.30 p. m. the minutes of the last meeting were read and approved without correction.

### Clinical cases.

Dr. La Rose reviewed the pathology and symptoms of tuberculous kidney and gave two case histories with pathological specimens.

Dr. Stackhouse reported a case of gonorrheal infection, which was treated by Mr. Enge, Chiropractor, with no report of the case to the Government. He also reported an abortion case seen that evening to which he had been called by the State's attorney. The case had been referred by one of our members to another of our members who performed the abortion.

Dr. Arnson, chairman of the program committee for this date took the chair, and the meeting proceeded with the program of the evening.

Dr. William H. Long, of Fargo, presented two papers, the first on the clinical recognition and management of cardiac irregularities.

This paper comprised a review of the physiology of heart action under normal conditions, followed by a review of the different arrhythmias with their differential diagnosis and treatment. He closed this paper with a demonstration of the errors in dosage in digitalis medication in prescribing by the drop method. He advised either having the patient buy a minim glass, or prescribing by cubic centimeters and having the druggist give the patient a medicine dropper tested for the number of drops necessary to give the prescribed number of cubic centimeters; also to have the druggist instruct the patient to return for another dropper should the first be broken.

The second paper was on parasitic infection of the bowels.

In this paper the speaker discussed entameba histolytica and coli infections, giving symptoms, diagnosis, and treatment with case histories showing how obscure the disease usually is and how difficult it is to obtain permanent cures.

The papers were discussed separately by Drs. Bodenstein, Brandes, Griebenow, Arnson, and Brandt.

Under unfinished business the bill for \$84.75 from Hoskins-Meyer, the amount still due from the Sixth District Medical Society on Dr. Smyth's radio set, was presented. In order to settle this bill Dr. Stackhouse moved to assess each member \$2.25 as special assessment for the year 1927. Seconded by Dr. Bodenstein, and carried.

Dr. T. M. MacLachlen's resignation was accepted.

Committees on programs for the year 1927 as follows:

February, Drs. J. O. Arnson, R. C. Tompson, W. C. Aylen. April, Drs. V. J. LaRose, C. C. Smith, and R. H. Waldschmidt. June, Drs. H. O. Brandes, F. B. Strauss, and W. C. Thelen. December, Drs. W. L. Diven, G. H. Spielman, and B. S. Nickerson. Meeting adjourned.

R. W. HENDERSON, M.D.  
Secretary

### Wanted—Laboratory Technician and Anesthetist

By a hospital in a Minnesota city of 7,000 inhabitants. Address 324, care of this office.

### Office Position Wanted

By a girl aged twenty with high school education and one year's training and some private experience as a nurse. Address 323, care of this office.

### Laboratory Technician Wants Work

Has had three years experience in large hospital. Can do both x-ray and general laboratory work. High-grade references. Address 305, care of this office.

### Practice for Sale

An unopposed \$4,000 annual practice in North Dakota is offered for sale for \$100, which will include office furniture. Am specializing. Address 330, care of this office.

### For Sale

An unappraised, well-equipped modern drug store. Sales \$12,000. Stock and fixtures worth about \$7,000. Good proposition and opening for a physician. Address 314, care of this office.

### A Good Opening

For an eye, ear, nose, and throat man, also a children's specialist in a city of 25,000. In good farming community not far from the Twin Cities. Address 330, care of this office.

### Practice for Sale

Established practice and office equipment for sale in largest city in North Dakota. Equipment includes New Diathermy Machine. Cause for selling, failing health. Address 326, care of this office.

### Locum Tenens Work Wanted

A well-equipped and experienced physician is at liberty for some time to assist and substitute for a physician inside or outside the Twin Cities. Best of references. Address 328, care of this office.

### High-grade Technician Wants Position

Can take care of the laboratory and x-ray work in a clinic or small hospital or take charge of either department in a large hospital. Has had nearly two years country and city experience. Address 307, care of this office.

### Physician Wanted

Eye, Ear, Nose, and Throat. To become associated with a group of physicians in Minneapolis. New clinical building. X-ray and clinical laboratories. Free office expense until established. Also wanted, an associate in General Practice and Surgery on salary. Address 329, care of this office.

### Hospital Superintendent Wanted

By an up-to-date 10-bed hospital in South Dakota at once. Give age, height, graduation year, weight, and religion. Send recent photograph in first letter. Doctors will confer favor if they will show this notice to some good nurse. Salary, \$100 a month with board and room. Address 327, care of this office.

### Practice for Sale

An unopposed practice in town of 600 in Northern Minn., in heart of Lake Region. A large territory, hospital facilities near by, fine roads, good schools and churches. Cash business from \$7,000 to \$8,000 a year. Am asking \$3,000 for fine nine-room modern residence and office equipment. Must quit general practice on account of my health. Address 325, care of this office.



# THE JOURNAL-LANCET

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## CHRONIC FATIGUE IN THE SCHOOL CHILD: A PSYCHOPHYSIOLOGIC STUDY

BY MAX SEHAM, M.D.

MINNEAPOLIS, MINNESOTA

[Dr. Max Seham, of Minneapolis, has made a real contribution to medicine in his study of chronic fatigue in school children. His addresses on the subject before medical societies in the East attracted much attention. We are republishing a part of his address before the New England Pediatric Society delivered last year in Boston and published in the *Boston Medical and Surgical Society*.

We also published on another page a review of "The Tired Child," written by Dr. Seham and his wife, and just off the Lippincott press.—THE EDITORS.]

### PRELIMINARY REPORT

Fatigue is a condition most intimately related to every day life. All of us, business men, housewives, industrial workers and school children suffer from it or are affected by it at some time or other, for short periods or for long. It is a sign of normal health, yet also a symptom of disease. Varied in its manifestations it is yet simple in recognition. As common as it is and as long as we have known about it, the nature of fatigue is still obscure. Physiologists, for the last fifty years, have been studying acute neuromuscular fatigue in the laboratory; psychologists, for twenty-five years past, have been investigating, by means of so-called performance tests, work and fatigue curves in normal subjects; and in more recent years industrial fatigue in the worker has attracted the attention of scientists. In the school child, however, as yet no systematic study has been made of chronic fatigue. The trend of civilization towards ex-

cessive nervous and emotional habits of living affecting man even in early life makes this problem of practical and vital importance. Indeed, no problem is more closely associated with the health and happiness of the school child than the problem of chronic fatigue.

*Definition of chronic fatigue.*—Since the term fatigue is so often misused and since there seems to exist a great difference of opinion as to just what it means let us say at once what we understand by chronic fatigue. To fatiguability, which often appears as one of many symptoms in organic disease we do not have reference. Nor do we have in mind acute fatigue which can be artificially produced in normal persons and which is the inevitable result of a definitely prescribed amount of work. Rather have we in mind a psychophysiological syndrome, which may be primary, yet often is secondary, in which the signs and symptoms of subefficiency are usually universal, where more than one organ and more than one system is involved. The symptoms, psychic, physical or mental in character, are varied, differing at times even in one and the same individual. In some children psychic, in others physical, symptoms may be predominant. The progress of chronic fatigue is usually slow and insidious. The condition may be permanent and even congenital. By that we mean that some children are born with an inferior constitution predestinating them to chronic fatigue for the rest of their

lives. As a clinical working definition we offer the following: Chronic fatigue is a psychophysiological syndrome of more than three months duration, the state of subefficiency manifesting itself in four ways: 1, feelings of fatigue; 2, actual decrease in the individual's average mental achievement; 3, actual decrease in the individual's average physical strength and endurance; and 4, emotional unbalance.

Why is it that the child is so highly susceptible to chronic fatigue? It is because 1, he lacks adequate preparation for his school work; 2, his inhibitory and coördinating mechanisms are relatively poorly developed; and 3, his emotional reactions are easily rendered abnormal.

1. *The child's lack of preparation for school work.*—When, at the age of six, the child enters school, he is taken out of his natural habitat of fresh air, sunshine and freedom and almost over night subjected to an artificial regime. He is confronted with fixed responsibilities. He is required to sit still for long periods at a time. He must control his desire to whisper to his classmates or to walk about in the school room. His new environment is out of harmony with his physiological needs. He is, at that age, naturally a motor and physical animal, spontaneous and dynamic. With almost no preparation he is transplanted into a sedentary and mental life. Whereas the adult has more or less training for his work, the child has practically none to do the work required by the school curriculum. Whereas the adult has a completely developed nervous system, the nervous system of the child is in the process of growth and strengthening. Whereas the adult can choose, at least to some extent, the kind of work he enjoys the most, and is allowed to develop his own rhythm and technic of work, the child must fit himself into the straight jacket of education, the so-called lock-step system, which happens to be in vogue. 'We are too prone to consider school work as mere play.' On the contrary, school work necessitates concentration, involves mental strain and creates nervous tension.

2. *Inhibition and coördination.*—Human efficiency depends not only on the amount of energy available for production, but also upon its adequate conservation. Proper conservation of energy, on the other hand, is dependent upon the development of the inhibitory and coördinating mechanism, which supervises all motor and mental actions. This mechanism protects the human machine from useless waste of energy and unrestricted activity. That this mechanism is not fully developed in the child is attested to by his

impulsiveness and lack of deliberation before acting. When the child is about to start a new task he does not sit down and thoughtfully decide on the most efficient method, but instead he plunges into it, trying one way and then another, until he has achieved the desired end or, as more frequently happens, he becomes discouraged and discontinues his efforts. Undoubtedly, the inhibitory and coördinating mechanisms play a great rôle in the postponement as well as in the production of chronic fatigue.

3. *Emotional reactions of the child.*—The more one studies chronic fatigue in the school child the more clearly motivation stands out as a causative influence. If the child were living in an atmosphere free from emotional stimulation the problem of chronic fatigue would be quite simple. But where is there a child to-day that, at one time or another, is not exposed to emotional strain, fear, worry, anxiety, excitement and nervous tensions? The child's threshold of emotional stability is on a lower level than that of the adult. He is more easily upset and incidents that are made light of by the adult often make a deep impression upon the child.

These, then, are three of the most important factors which account for the high susceptibility of the child to chronic fatigue.

The experimental work that follows was carried out to establish: (1) Whether objective tests are of use in the diagnosis of chronic subefficiency of chronic fatigue and (2) whether the answers to the questionnaires by the child, the parent, the class room teacher and the gymnasium teacher give information sufficiently reliable to warrant their use in functional diagnosis.

1. *Objective tests.*—It would, of course, be of great practical importance if the degree or the amount of fatigue could be measured objectively. The large number of psychophysiologic tests that in the past have been used can be divided into performance and non-performance tests.

In a previous study of the physical capacity of normal children by means of several physical tests we came to the conclusion that no one test is a reliable index of fatigue. An analysis of Table I which records the physical capacity determined by means of the stationary bicycle shows how difficult it is to establish correct standards of physical capacity of normal children, to be used as a basis of comparison for the capacity of fatigued children. For instance, the same individual (H.R.) will perform, at various sittings, from 40,000 to 56,000 foot pounds. With so great a difference, with so high a coefficient of variability existing in normal children,



TABLE I.—EFFECT OF MAXIMUM AMOUNT OF WORK IN FOOT-POUNDS ON PULSE AND SYSTOLIC BLOOD PRESSURE. AGE 12 YEARS.

Subject	Age in Years	Weight in Pounds	Height in Inches	Foot-Pounds of Work	Pulse					Systolic Blood Pressure					Remarks		
					After Exercise					After Exercise							
					Before Exercise	Maximum Reading	Time of Maximum Reading, Sec.	Rise	Reaction Time, Sec.	Before Exercise Mm.	First Reading, Mm.	Time of First Reading, Sec.	Maximum Reading, Mm.	Time of Maximum Reading, Sec.		Rise, Mm.	Reaction Time, Sec.
J. D. ....	12	68	49½	1 48,048 2 40,275	96 84	192 188	5 5	96 84	600+* 600+*	113 113	140 148	5 5	158 158	40 20	45 45	570 510†	*Pulse 114 at 600" *Pulse 108 at 600" †Presence of principal might have delayed drop of blood pressure.
H. R. ....	12	75	56½	2 56,881 1 40,481 3 44,837	90 90 96	216 192 180	5 5 5	126 102 84	600+* 420+* 420+*	103 101 136	138 138 188	5 5 5	144 155 188	50 30 5	41 54 52	420 390 330	*Pulse 120 at 600" *Pulse 120 at 420" *Pulse 126 at 600" *Pulse 126 at 450" †Bl. Pr. below normal at 240", 116 at 450"
A. M. ....	12	109	61½	1 37,740	72	180	5	108	450+*	129	135	5	155	30	27	210†	
D. G. ....	12	100	58½	2 26,240 1 44,514 2 30,139	90 115 112	156 180 168	10 5 5	66 65 56	900+* 420+* 540+*	132 115 112	169 126 130	20 5 5	169 138 132	20 30 5	37 23 20	150 210 210	*Pulse 120 at 900", 90 at 30 minutes *Pulse 132 at 420" *Pulse 115 at 540", murmur *Pulse 115 at 360", Exp. 1 against 1½ pounds
J. T. ....	12	76	55½	1 30,709	84	...	...	...	360+*	102	124	5	124	5	22	180	
T. B. ....	12	89	54½	2 12,622	104	...	...	...	420+*	100	121	10	130	30	30	360	*Pulse 120 at 420", Exp. 2 against 1½ pounds
J. B. ....	12	89	54½	1 24,299 2 20,224 2 28,711	84 90 66	156 156 ...	10 5 ...	72 66 ...	480+* 360+* 600+*	102 100 98	107 115 124	15 5 5	127 134 136	50 20 20	25 34 43	240 300 360	*Pulse 96 at 480" *Pulse 102 at 360" *Pulse 82 at 600" *Pulse 78 at 600"
M. S. ....	12	81.5	58	1 14,856	60	...	...	...	600+*	99	124	10	132	50	33	270	*Pulse 80 at 600", murmur
A. J. ....	12	74	57½	2 25,432	87	156	5	72	600+*	97	120	10	132	50	36	450	
B. B. ....	12	62.5	52½	2 20,853	66	132	5	66	540+*	116	152	5	147	20	31	210	*Pulse 84 at 540"
B. B. ....	12	84	52½	2 18,407	84	156	10	72	540+*	109	155	5	159	10	50	300	*Pulse 108 at 540"
A. G. ....	12	80.5	60	1 14,069 1 16,304	96 84	180 168	5 30	84 84	540+* 540+*	112 112 107	148 155 134	5 5 30	149 149 140	5 60	36 33	240 240+*	*Pulse 108 at 240" *Pulse 108 at 240" (one of first Exp. made)
M. R. ....	12	74	56	2 14,667 16,740	84 108	168 132	5 30	84 24	480+* 240	107 108	128 152	5 30	145 132	40 30	38 44	270 450	*Pulse 96 at 480"
12 cases, 23 determinations....	12	84.1	56	29,216	87	171.8	5	81.6	600+	110	136.8	5	144.2	24.3	36.2	323	M. R. excluded

TABLE II—COMPARISON OF ANATOMICAL MEASUREMENTS AND OF OBJECTIVE TESTS OF NORMAL AND ABNORMAL SUBJECTS

MEASUREMENTS AND TESTS	NORMAL			ABNORMAL		
	Average	Med. dev.	% Med. dev.	Average	Med. dev.	% Med. dev.
Height (inches)	57.5	1.83	3.18	59.17	2.37	4.01
Weight (pounds)	86.2	3.95	4.65	81.4	7.98	9.8
Circumference of head (cm.)	53.13	1.25	2.36	53.33	0.87	1.63
Circumference of chest (cm.)	67.4	3.57	5.29	61.7	4.58	7.42
Circumference of biceps (cm.)	22.1	1.04	4.7	20.1	1.39	6.91
Circumference of elbow (cm.)	23.1	1.41	6.104	22.3	1.38	6.19
Slow movement	a 1.51 b 0.81	0.67 0.394	44.66 48.64	1.77 0.36	1.08 0.74	61.00 205.5
Letter cancellation	a 40.9 b 81.7	4.03 11.31	9.85 13.84	37 75.7	5.57 13.04	15.06 17.22
Steadiness test	4 hole a 4.13 b 5.4	3 3.9	75 73.7	8.7 8.16	4.88 5.95	50.3 74.37
	5 hole a 10 b 10.8	5.66 6.22	56 57.6	16.3 15.48	6.80 7.21	42.8 46.53
	6 hole a 20.80 b 19.42	8.00 7.89	38.09 41.52	19.30 15.2	9.37 6.93	51.22 45.59
	7 hole a 25 b 24.4	10.2 11.3	40.8 46.3	30.15 31.10	7.75 8.63	28.75 27.83
	8 hole a 32.3 b 35	11.59 12.19	35.89 37.68	38.85 38.58	8.3 7.89	21.29 20.23
Body balance (seconds)	118.6	16.31	13.82	146	72.39	56.3
Stick balance (seconds)	14.8	15.9	10.6	6	3.51	58.5
Tapping	a 69.5 b 82.1	11 7.86	15.83 9.59	67.13 75.4	12.39 9.57	18.49 12.69

the amount and degree of fatigue cannot possibly be measured accurately.

The main reason, however, for the unreliability for diagnosis of such or similar methods must be sought in the fact that they measure solely the amount of work accomplished by one or several groups of muscles or one or several organs of the body. In order to determine the general state of efficiency, or the total functional capacity of the individual, motivation must also be measured, and that is well nigh impossible.

In Table II are recorded the results (by average, medium deviations and percentage deviation) of a study of (1) normal children used for control and (2) chronic subefficient children by means of performance and non-performance tests. On the assumption that the abnormal group might have less reserve energy than the normal group the time of performance was extended to twice that ordinarily prescribed by psychologists in their measurements of acute fatigue, artificially produced.

The letter cancellation test was continued for two instead of one minute, the slow movement test was repeated 8 instead of 4 times, the tapping test 10 instead of 5 times, and the steadiness test 6 instead of 3 times. In the letter cancellation test, the child is required to check the

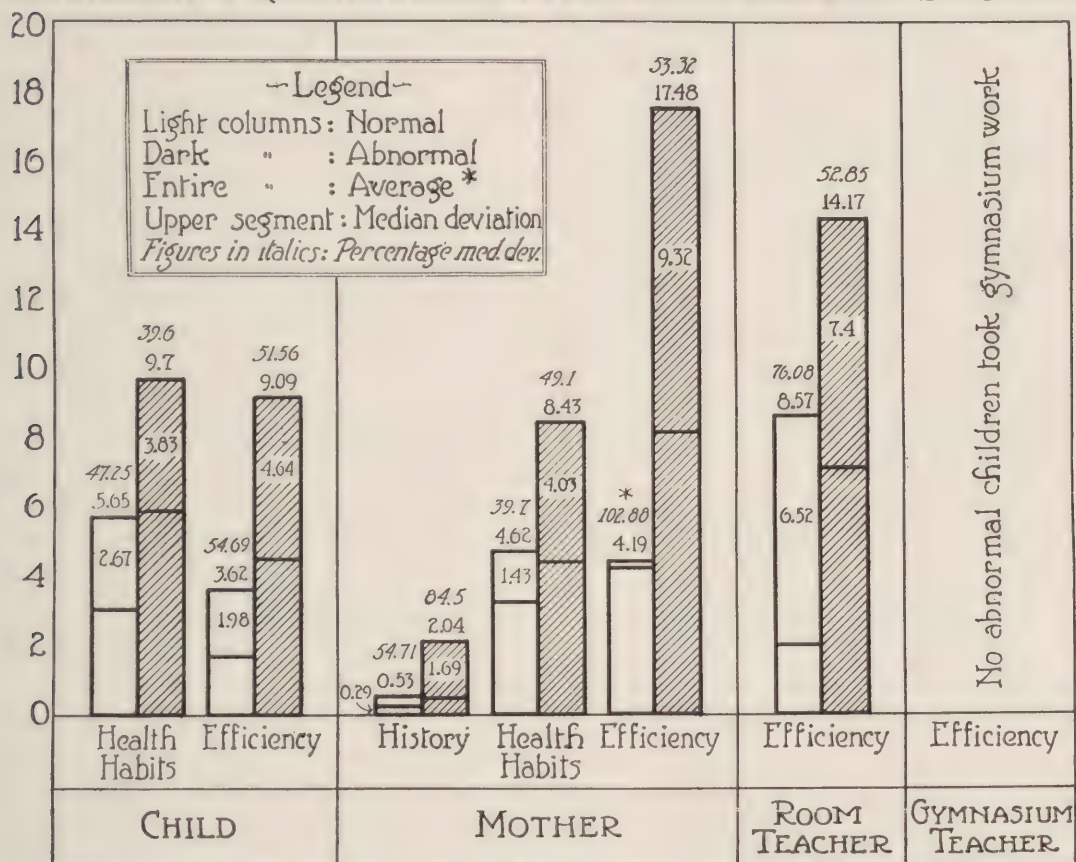
A's on a printed sheet of letters as speedily as possible, the number of checked A's being counted at the end of one and two minutes. In the slow movement test the child traces the circles printed on the chart as slowly as possible 8 consecutive times, in periods of two minutes each, thirty seconds being allowed for rest between two trials. In the tapping test the child makes pencil dots (printed squares being used to facilitate counting) at the fastest rate possible. Ten trials, of 15 seconds each, with a 15 second rest period between trials, are allowed. In the steadiness test, a metal pointer is inserted by the child into six successively smaller holes on a metal block, the child being instructed not to touch the edges of the holes. Every time the child touches the edge with the pointer the electrical current is closed and the counter registers one point. In the body balance test the child stands with the ball of the right foot on a wooden block. The child is urged to hold his balance as long as possible. The stick balance test requires the balancing of a yard stick on the tip of the index finger.

Letter "a" in Table II refers to the first half and letter "b" to the second half of an experiment. It is in the second half that quantitative differences between normal and abnormal children might theoretically be expected. Contrarily,



TABLE III

## COMPARISON OF QUESTIONNAIRES OF NORMAL AND ABNORMAL SUBJECTS



\*With the exception of the "Efficiency" of the Normal Mother. - Average = 4.19, Med. dev. = 4.31

a comparison of the averages in the slow movement test shows a greater steadiness in the abnormal cases (0.36 of a circle against 0.81). This test must, therefore, be considered of no value in the measurement of chronic fatigue. The same consideration applies to the letter cancellation test, since the difference (75.7 as against 81.7) is too small to be considered sufficiently significant for diagnostic use. Also the tapping test is apparently negative, the difference in the averages (75.4 as against 82.2) certainly lying within the error of experimentation. Nor do we find that the body balance test and the stick balance test can be used for practical purposes. In the steadiness test, however, there seems to be an indication that subefficient children are less steady. In both the first and second half of the experiment there is, with the exception of the fifth hole, a consistent difference in the number of "touches" of the normal and abnormal children. Whether this test can be used for diag-

nostic purposes remains to be shown by further experimentation.

TABLE IV

## CLASSIFICATION OF CHRONIC FATIGUE IN THE SCHOOL CHILD FROM A PSYCHOPHYSIOLOGICAL POINT OF VIEW

## Congenital.

## 1. Congenital Asthenia Universalis.

## Synonyms:

- (1) Congenital Asthenia.
- (2) Still's Disease.
- (3) Neurocirculatory Asthenia.
- (4) Effort Syndrome.
- (5) Status-Thymico-Lymphaticus.

## 2. Neuropathic Diathesis.

## Synonyms:

- (1) Neurosis.
- (2) Neurocirculatory Asthenia.
- (3) Nerve Overstrain.
- (4) Hyperkinesia.

## Acquired.

## 1. Normal physical development with subefficiency.

- (1) Psychophysiological.
- (2) Physiopsychologic.

## 2. Linear type-Asthenia.

TABLE V

## PREVENTION OF CHRONIC FATIGUE

- (1) Knowledge of family history.
- (2) Recognition of inferior types as Neuropathy-Asthenia, etc.
- (3) Establishment of adequate physical and mental health habits in infancy.
- (4) Physical exercises (especially corrective) in infancy and pre-school age.
- (5) Recognize all causes responsible for chronic fatigue.
- (6) Improve general health.
- (7) Prevent repeated attacks of acute fatigue due to
  1. Emotional overstrain,
  2. Organic disease,
  3. Inadequate health habits.
- (8) Equalize the physiological and chronological ages.
- (9) Public School System.
  1. Substitute the dynamic for the static.
  2. Substitute the individual for the lockstep.
  3. More special classes.
  4. Attention to health of teacher.
  5. Improved room facilities.
  6. Vocational selection and guidance.
  7. Conservation of special senses (ears, eyes, feet.)
  8. Education in technic of mental work (rhythm, rate, use of instruments).
  9. Recesses and rests in school.
  10. Supply necessary motive and interest, based upon laws of growth and development.
  11. Decrease nervous tensions.
  12. Physical education for all children every day.

A few words about the results of the anatomical measurements may not be out of place at this time. A comparison of the averages of the various measurements (Table II), shows that sub-efficient children are inferior to normal children. We shall not enter into a more detailed discussion, in this preliminary report, since a more complete study of anatomical measurements will be forthcoming in the near future.

II. *The use of questionnaires in functional diagnosis.*—Our questionnaires, which are too long to be published in detail,\* were aimed at the general efficiency of the child as well as his health habits. The questionnaires were answered by the mother, the school teacher, the gymnasium teacher and the child himself. Table III is an analysis of the questionnaires. For each child, the number of answers denoting inadequate health habits or signs of subefficiency were added up. A glance at Table III shows the marked contrast in the number of positive answers between the normal and abnormal children. (1) Abnormal children have poorer health habits than normal children (9.6 against 5.65). (2) Their efficiency is almost 1/3 of that of normal

children (9.9 against 3.62). (3) The figures 2.4 and 0.53 respectively indicate that their family history is more positive. (4) Their efficiency, judged by the mother is worse than that of normal children (8.43 against 4.19). (5) Their efficiency as observed by the teacher is inferior to that of normal children (17.48 as against 8.57).

*Classification of chronic subefficiency in the school child.*—From a psychophysiological Point of View. The subefficient children whom we studied can be divided into two groups, the congenital and the acquired (Table IV). In the congenital group, the two most important types are Congenital Asthenia Universalis, often referred to as Congenital Asthenia, Stiller's Disease, Neuro-circulatory Asthenia, Effort Syndrome and Status-thymico-lymphaticus. (2) Neuropathic Diathesis, known as Neurosis, Neurasthenia, Nerve Overstrain and Hyperkinesis.

The acquired group comprises children: (1) of normal physical development with symptoms predominantly psychophysiologic or physiopsychologic, and (2) those who are linear in type, simulating congenital asthenia yet whose history does not reveal any congenital or familial disorders.

*Causes of chronic fatigue:* Amongst the most common causes of chronic fatigue are: inadequate sleep, inadequate food, excessive social activities, excessive amount of outside work, as peddling newspapers, carrying sacks of coal, clerking in grocery stores and drug stores, excessive amount of house work and home study. Also such factors as poor ventilation, bad lighting, inadequate furniture, speed tests in school, insufficient rest periods, and a nervous and fatigued teacher on the one hand, and inadequate health habits and improper home hygiene, both mental and physical, on the other, contribute to the production of chronic fatigue.

For the prevention of this common disorder we present in Table V, a scheme for prevention en masse and in Table VI, a schedule of rational habits for the individual child.

The schedule of rational habits here suggested is based on the school curriculum in Minneapolis public schools. Slight changes, therefore, may be necessary to make the schedule applicable to children living in other cities and particularly for children living in country districts.

## SUMMARY AND CONCLUSIONS

I. Chronic fatigue, or rather chronic subefficiency may be defined as a psychophysiological syndrome of more than three months duration,

\*See "The Tired Child" by the writer.



TABLE VI—DAILY SCHEDULE OF RATIONAL HABITS FOR SCHOOL CHILDREN

Age in Years	Time of Rising	Breakfast Time	Time Between Breakfast and School (minutes)	Morning Session		Time Between School and Luncheon (minutes)	Luncheon Time (minutes)	Time <sup>*1</sup> Between Luncheon and School (minutes)		Afternoon Session		Supper Time	Free Time <sup>*2</sup> in minutes	Play <sup>*3</sup> in minutes	Miscellaneous <sup>*4</sup> Work Time		Bed <sup>*5</sup> Time	Hours of Sleep	Diet in Calories
				Begins at	Ends at			Begins at	Ends at	Begins at	Ends at				Physical	Mental			
6	7 a.m.	7:45-8:05	40	8:45	11:30	30	12:00-12:30	45	1:15	3:00	6:00-6:30	180	180	180	0	0	6:30	12	1500-1600
7	7 a.m.	7:45-8:05	40	8:45	11:30	30	12:00-12:30	45	1:15	3:00	6:00-6:30	180	180	180	0	0	6:30	12	1600-1700
8	7 a.m.	7:45-8:05	40	8:45	11:45	30	12:00-12:30	30	1:15	3:15	6:00-6:30	195	195	0	0	0	7:00	11½	1700-1900
9	7 a.m.	7:45-8:05	40	8:45	11:45	30	12:15-12:45	30	1:15	3:15	6:00-6:30	225	200	25	0	0	7:30	11	1900-2100
10	7 a.m.	7:45-8:05	40	8:45	11:45	30	12:15-12:45	30	1:15	3:15	6:00-6:30	225	165	30	30	30	7:30	11	2100-2300
11	7 a.m.	7:45-8:05	40	8:45	12:00	15	12:15-12:45	30	1:15	3:15	6:30-7:00	275	180	45	45	30	8:00	10½	2300-2500
12	7 a.m.	7:45-8:05	40	8:45	12:00	15	12:15-12:45	30	1:15	3:15	6:30-7:00	285	180	60	60	45	8:30	10	2700-2900
13	7 a.m.	7:45-8:05	40	8:45	12:00	15	12:15-12:45	30	1:15	3:15	6:30-7:00	300	180	60	60	60	9:00	9½	2900-3200
14	7 a.m.	7:45-8:05	40	8:45	12:00	15	12:15-12:45	30	1:15	3:15	6:30-7:00	300	165	60	60	75	9:00	9½	3200-3400
15	7 a.m.	7:45-8:05	40	8:45	12:00	15	12:15-12:45	30	1:15	3:15	6:30-7:00	300	165	60	60	75	9:00	9½	3300-3500

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<sup>\*1</sup>—15 to 20 minutes of this time should be used as a rest period.<sup>\*2</sup>—By free time is meant the time between the end of the afternoon session and bed-time, the time spent at supper is not included.<sup>\*3</sup>—Part of the free time should be given to play, preferably out of doors.<sup>\*4</sup>—Only a small proportion of their free time should be given to work requiring responsibility. Work is divided into physical and mental. No child under 9 years should be requested to do any mental or physical work out of school.<sup>\*5</sup>—30 minutes are allowed between going to bed and falling asleep.

the state of subefficiency manifesting itself in four ways: by,

1. Feelings of fatigue.
2. An actual decrease in the individual's average mental achievement.
3. An actual decrease in the individual's average physical strength and endurance.
4. Emotional unbalance.

II. Neither the amount nor the degree of fatigue can be measured by objective tests.

III. A diagnosis of chronic fatigue is justified in the presence of feelings of fatigue, and one of the other three factors mentioned in the definition of chronic fatigue.

IV. The greater number of positive answers in the questionnaires of the abnormal group of children justifies the use of questionnaires in the diagnosis of chronic subefficiency.

V. A tentative classification of chronic fatigue, based upon observed clinical types, is offered as a practical guide in diagnosis, and management.

VI. A program of prevention is suggested.

VII. A schedule of rational habits applicable to the individual child attending public schools is suggested.

Thanks are due at this time to Professor R. E. Scammon, J. E. Anderson, J. F. Anderson, all of the University of Minnesota, for their many practical suggestions.

We should also like to express our appreciation to Mr. W. W. Webster, Superintendent of Public Schools of Minneapolis, Dr. H. E. Harrington, Director of School Hygiene, for permission to work in the Public Schools, to Mr. Phillip Carlson, Principal of Roosevelt High School, and Miss S. Benson, Principal of the Trudeau School, for their splendid co-operation.

## MEDICAL ETHICS\*

BY JOHN W. BELL, M.D.

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Medicine as a profession consists of two important parts: the Science of Medicine and the Art of Medicine. Medicine as a science has to do directly with disease; Medicine as an art, with the individual suffering from disease. The difference is a very real and important one. We should remember that medicine is not an exact science, consequently we should not attempt to standardize disease too critically, but should consider the patient as well as his disease. The science of medicine we learn from books, lectures, clinics, in the laboratory, and in the post-mortem room. The art of medicine, the method of intelligently and efficiently using this knowledge in the relief of the afflicted, we learn from experience and from observing the methods of successful physicians, aided by our past training and knowledge of the world. I sincerely trust we are approaching an era in medicine when more time and consideration will be given to the art of medicine in the regular college curriculum. Medical ethics relates especially to the art of medicine and is our problem to-day.

Had we the time it would be most interesting and instructive to trace the course of development of the code of ethics down the ages, but we are more directly concerned at this time with the code as it exists to-day, and its application in our daily intercourse with patients, colleagues, and the public. In brief, the basis of the code of medical ethics is the essence of the Hippocratic Oath and the application of the Golden Rule in dealing with patients and colleagues.

It is well to remember that more men fail in the practice of medicine from inability to understand and manage people than from ignorance of the science of medicine, colossal as the latter may be at times. Hence the extreme importance of giving careful attention to the art of medicine. The future of medicine rests with the students of to-day. The physician's life is a strenuous one, but its rewards are many and within the reach of all who sincerely seek to serve humanity. Medicine has for its prime object the service it can render humanity. In choosing a profession an individual assumes an obligation to conduct himself in accordance with the ideals of the chosen profession. In discuss-

ing the principles of medical ethics and their application, we naturally divide the subject as follows:

1. Duties of physicians to their patients.
2. Duties of physicians to each other.
3. Duties of physicians to the public.

1. Ethical duties of physicians to patients: In his intercourse with patients self-control, tact, ability to inspire confidence, sympathy, and discretion of speech are required, in varying degree, every hour of the physician's professional life. By self-control we mean calmness and presence of mind under all circumstances. The physician who betrays indecision and worry, and shows that he is flustered in an emergency, rapidly loses the confidence of his patients. Hence the necessity of keeping his nerve centers under control. He should attempt to cultivate such a judicious measure of obtuseness as will enable him to meet the trials of practice with firmness and courage without hardening his heart.

The natural gift that contributes most to success in dealing with patients is tact, doing the right thing at the right time in the right way. The ability properly to meet and greet patients, as well as the anxious relatives and friends, is a valuable asset. The ability, in taking a history, to inquire into the secrets of the private life of the patient with such tact and delicacy as to encourage confidence but not give offense; or to announce a grave prognosis in a manner at once honest and sympathetic, requires tact of a high order. The ability to inspire confidence, natural to some, is a most valuable aid to a physician; in fact no part of the physician's art is so essential to success. The power to inspire confidence rests on ability and strength of character. Once he has the absolute confidence of his patient, the physician will have little difficulty in controlling or directing him.

Sympathy, more than any other quality, wins the hearts and confidence of patient and relatives. The cold, distant man, though skillful, has never a warm welcome in the sick room. The physician should be hopeful and encouraging, without being untruthful. He must have a keen sense of what the patient requires; it is not always physical relief, often encouragement and moral support. A colleague, in charge of a neurotic young woman, was called out of the

\*Address presented to the Senior Medical Students of the University of Minnesota Medical Department, February 19, 1927.



city for a day. He requested a quiet, solemn, medical friend to visit the patient during his absence. The following day, on calling upon her, the doctor was disappointed to find the patient quite depressed, and insistent that she was not so well. He could discover no actual change for the worse, and asked, "What leads you to think you are worse? Dr. J. did not tell you your condition was alarming, did he?" "Oh, no," she replied, "it was not what he said but the way he looked."

Discretion in speech should be the constant aim of the physician in his intercourse with patients and colleagues. To know and guard the family secrets, and never by word or look betray them, requires rare self-control on the part of the physician. He should keep constantly in mind the fact that the spoken word is his master, the unspoken one his servant. We should all agree with Socrates that thanks are due the Creator for having supplied us with two eyes and two ears, but only one tongue. The physician should remember that scandal is like an egg—when it is hatched it has wings. Indiscretion of speech will cause him, as well as his colleagues, more grief and annoyance than any other personal weakness. An indiscreet remark about a fracture treated by a colleague is one of the most frequent causes of malpractice suits.

The physician should remember that it is his duty in the care of a patient, in every instance, to inform the family of the approach of dangerous symptoms or manifestations. The care of a patient suffering from a dangerous illness, and the associate problem of comforting and satisfying the anxious members of the family—to say nothing of the interested friends, will tax him, in certain cases, as severely as any problem connected with his professional work. It is his right and duty, even though not suggested or requested, to ask for assistance. A consultation is always in order, and should be welcomed by the attending physician. I recall the relief and comfort I personally secured some thirty years ago, through the assistance of that prince of physicians and consultants, Sir William Osler. The anxious family were all insistent that relief should come to the father, a man advanced in years, suffering from marked arteriosclerosis, including coronary involvement. When Dr. Osler reached the home he brought comfort to us all, in his quiet, sympathetic, unpretentious way, although the patient was in that unfortunate condition so aptly described by the elder Adams, in answer to the inquiry of a friend regarding the state of his health. Shaking his

head, he replied, "The old house is in bad repair, the windows rattle, the doors creak, and the foundation is crumbling, but, saddest of all, the landlord absolutely refuses to make the slightest repairs." This unfortunate condition you will often be called upon to contend with, but you may not always have so sympathetic a consultant as Dr. Osler to assist you in comforting the patient and calming the anxiety of the family—the latter one of the most difficult tasks met with in the care of the sick.

The physician should always remember that the poor, as well as the rich, are human and should receive the same careful consideration. Especially should the young physician remember that the poor are his first and most loyal patients. A physician is free to choose whom he will serve, but should always respond promptly to an emergency call. Having undertaken the care of a case, he should not abandon or neglect the patient because the disease is incurable, nor withdraw from the case without sufficient warning to the patient and family. He should bear constantly in mind that the physician is a member of a profession, and should be above the tricks and petty jealousies of trade. He should deal conscientiously with his patients, bearing in mind that in no other calling is the amount of service left absolutely to the judgment and conscience of the person employed and to be paid for the same. Whether he shall make few or many calls is left to his discretion and honest judgment.

2. Duties of physicians to each other and to the profession at large: The obligation assumed on entering the profession requires the physician to conduct himself as a gentleman, and demands that he use every honorable means to uphold the dignity and honor of his vocation, and to extend its sphere of usefulness. He should be diligent in study, patient, modest, prompt to do his duty, and conduct himself with propriety at all times.

Solicitation of patients by physicians as individuals or collectively in groups, by whatsoever name called, is unprofessional. It is equally unprofessional to procure patients by indirection through solicitors or agents or through newspaper or magazine comments concerning cases in which the physician is interested. The most effective advertisement for the young physician, especially with his colleagues, is a reputation for ability and fidelity. It is unprofessional to receive remuneration for patents for instruments or for medicine. It is unprofessional to promise radical cures or to boast of cures and secret methods of treatment. Physicians should ex-

pose before the proper medical tribunal corrupt or dishonest conduct by members of the profession, for it is their duty to safeguard the profession against those in its ranks who are unfit or unqualified.

Aside from minor ailments a physician should not treat members of his own family or himself. Physicians should cheerfully and gratuitously respond to the call of any colleague, or any member of his immediate family, if requested. In case a physician from a distance is called, compensation sufficient to cover actual expenses should be proffered. If the illness assumes a serious character one colleague should be placed in charge, and others may be associated as consultants.

In serious illness, and especially in obscure cases, it is a physician's duty to request consultation. The selection of the consultant is usually decided by conference of the attending physician with the family. In every consultation the benefit to the patient is of first importance, hence the attendant should select a physician able to focus his knowledge at the bedside. I repeat—in every consultation the benefit to the patient is of first importance, hence the physician should be frank and candid with the patient and family. A consultation is no time or place for show or ostentation, and the consultant guilty of self-aggrandizement under such circumstances is not the ideal physician, and should be shunned as a consultant. After the physicians called in consultation have completed their investigation of the case, they should meet by themselves to discuss the case, and the treatment to be pursued, and should then promptly inform the family as to the prognosis.

Physicians in the instance of a consultation should be punctual, but, if either is unavoidably detained, the one who first arrives should wait a reasonable time. When the consultant is from a distance, and the case an urgent one, if the patient and family request, he should secure a brief history, and examine the patient, and confer with the attending physician later. The family physician should make every effort to be punctual; if unavoidably detained he should inform the family, if possible. In an unfortunate experience of this kind the consultant must use extreme caution and tact, also remember that he is forming an opinion without the aid of the physician who has observed the course of the disease from its onset. Physician in charge is responsible for carrying out the treatment, and is privileged to modify treatment if required. In the absence of the attending physician, in case

of an emergency, the consultant should be called or consulted.

When a patient is referred to a specialist, a group, or a clinic, and the attending physician cannot accompany the patient, he should forward a brief history, and after examination the consultant should write the attending physician his view of the case and treatment. In case the attending physician and the consultant find it impossible to agree, another consultant should be called or the first should withdraw. The consultant, having been employed by the patient, should be permitted to state the result of his study of the case to the patient or family, in the presence of the attending physician. The consultant, in a given case should not become the attendant during that illness, except at the pressing request of the attending physician. It is the duty of the consultant to use every honorable means to strengthen the confidence of the patient and family in the faithful attending physician. The physician in his intercourse with a patient under the care of another physician, should avoid criticism or disingenuous hints relative to the nature or treatment of the patient's illness. In case of misunderstanding he should seek an interview with the physician concerned. A physician should avoid making social calls on a patient under the care of other physicians. A physician should never take charge of or prescribe for a patient under the care of another physician, except in an emergency, until after the other physician has relinquished the case or been dismissed.

When several physicians have been called in a case of sudden illness or injury, the first to arrive should be considered in charge until the arrival of the family attendant. When there arises a grave difference of opinion between physicians the matter should be arbitrated or referred to the Board of Censors of the County Society.

Gratuitous services to the worthy poor should never be shunned or denied. But endowed institutions or organizations for mutual benefit, and accident, sick, or life insurance organizations have no legitimate claim on the physician's time without compensation.

It is unprofessional to give or receive a commission or divide a fee for medical or surgical care unless the patient or family is fully informed of the arrangement. The patient should be informed that a proper fee should be paid the family physician for services rendered in determining the diagnosis, and directing the patient to those best qualified to relieve him.



*Contract practice.*—It is unprofessional for a physician to barter his services under conditions that make it impossible to render adequate service to his patient, or which interfere with reasonable competition among physicians of the community. To do this is detrimental to the public and to the individual physician, and lowers the dignity of the profession.

This brings us to the vexed question of dealing in an ethical manner with the walking or office patient. The code, unfortunately, is silent as to the management of this troublesome problem—one very much in evidence. Some physicians hold that the traveling patient is no man's patient, and that he is free to wander. However, in taking the history, and at least after examination, the physician should attempt to guide him, if he is willing to be advised. A patient of this kind, if under the care of a qualified, ethical physician, should be encouraged to return, and continue treatment, with the understanding that the physician will be pleased to confer with the present attending physician, and be of any service possible in bringing relief. If the patient refuses, the physician will be obliged to take charge of the case.

Physicians should recognize and promote the profession of pharmacy, especially the careful compounding of prescriptions, but the pharmacist who presumes to prescribe for the sick should be denied support. It is pathetic to find that many of our drug-stores are fast assuming more the appearance of ice cream parlors and cheap cafés than pharmacies, where the greatest care should be exercised in compounding prescriptions for the relief of the sick or injured.

When a physician is requested by a colleague to care for a patient during his absence, or because of an emergency, he should treat the patient with the same care and consideration he would wish to have one of his own receive under like circumstances, and return the patient at the earliest possible hour to the attending physician. The same course should be pursued when a physician is called during the enforced absence of a colleague.

In order that the dignity and honor of the profession may be upheld, its sphere of usefulness extended, and the advancement of medical

science promoted, the young physician should promptly unite with his county society, and contribute his time, and energy, and means to sustaining and strengthening this important society, and others that he may unite with later. With extreme care he can and will avoid friction and misunderstanding with colleagues, but he will occasionally meet with a supersensitive creature who never should have entered the field of medicine. We should all seek to avoid developing sensitive professional corns, and should permit at least one night to elapse before deciding we have been injured by unethical treatment. We should keep constantly in mind the fact that even good people apparently enjoy mixing up medics, to say nothing of the other class.

3. Duties of physicians to the public: Physicians, because of their professional training, should give advice concerning the public health of the community, and should take an active part in civic affairs, especially those relating to sanitary regulations.

#### CONCLUSION

In the line of duty the physician will be father-confessor to many a patient, and, under no circumstances, should betray the trust imposed. To the trusted family physician and counselor the father will come with his anxieties, the mother with her hidden griefs, the daughter with her trials, and the son with his follies. No individual carries greater responsibilities to the generation in which he lives, or the community in which he practices, than the physician. It is he who guides the mother through the greatest crises of her life, and it is in his hands that the helpless babe rests ere the anchor rope is severed that sets the frail bark adrift on the great ocean of life. And when life's day is spent, and evening is announced by the inelastic step, the dimmed vision, the impaired memory, and the hardened artery, the frail old man returns to his friend of the morning, to be relieved and comforted until his eyes are finally closed in the eternal sleep. With the picture of this sacred duty in mind, let it never be recorded that a graduate of the Medical Department of this University ever betrayed the trust imposed.

# SERUM REACTION IN MAN

BY CHESTER A. STEWART, M.D.

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Following the first administration of various serums to patients, reactions designated as *serum sickness* occur with appreciable frequency. Among the symptoms characteristic of this condition are included urticarial eruptions, angio-neurotic edema, arthritic pains, abdominal distress, nausea, vomiting, fever, and prostration. Serum sickness most commonly appears six to seven days after the injection of the foreign protein, and rarely develops earlier than the fifth day. In individuals who have been sensitized to serum by its administration at some previous time, a subsequent injection of the same foreign protein may result in reactions differing from ordinary serum sickness in the prompt shock-like appearance of symptoms of marked severity. Occasionally it becomes necessary to administer serum to patients a second time, and under such circumstances the physician, as a result of his experience, combined with a knowledge of the distressing possibilities of anaphylaxis, faces the situation with some concern. The probability of the occurrence of anaphylactic death in such cases, however, is very remote, for the total number of reported fatal cases is extremely small as compared with the vast number of patients to whom serums have been safely administered. In fact, the majority of such cases have occurred in patients receiving serum for the first time, and almost exclusively in asthmatic individuals and in patients having status thymico-lymphaticus. Although possibilities, such as are mentioned above, are extremely remote, nevertheless, they cannot be entirely ignored. It is advisable, therefore, when dealing with asthmatic patients, and with those sensitized to horse serum, either to desensitize these individuals by repeated small injections of serum at one-half to one hour intervals over a period of eighteen to twenty-four hours before the final full therapeutic dose is given, or to adopt other measures to obviate the appearance of severe shock reactions to a foreign protein.

Shock reactions to foreign protein following the administration of various serums to children who had been immunized several months before against diphtheria by toxin-antitoxin administration have been reported recently by the writer (Stewart, 1926). The reactions observed were exceedingly severe and prompt in appearance, and were attributed to the existence of hypersensitiveness to horse serum resulting from diphtheria immunization. This assumption is supported by the observation of Hooker and Park, who found hypersensitivity to horse

serum as demonstrated by skin test in about 27 per cent of a group of children immunized by toxin-antitoxin injections. Additional evidence, supporting this opinion has been obtained by the writer on demonstrating that injections of diphtheria toxin-antitoxin render guinea-pigs susceptible to anaphylaxis.

The writer does not wish to be interpreted as advocating a discontinuance of diphtheria immunization, but, rather, to point out the possibility of sensitizing individuals by this procedure to horse serum, the same foreign protein which is present in the majority of therapeutic and prophylactic serums at present available for use. It appears advisable, therefore, to employ a preparation containing some serum other than that derived from horses (possibly goat serum) for diphtheria immunization. Unless such a change is made, physicians probably will obtain severe prompt shock reactions with increasing frequency in the future if a considerable portion of the child population in general is rendered hypersensitive to horse serum. Certainly the occurrence of the prompt shock-like reactions superimposed upon the toxemia with which the patient is suffering as the result of scarlet fever or any other disease is undesirable and should be avoided if possible. There is considerable promise that in the near future diphtheria immunization may be safely and effectively accomplished by the administration of antitoxin and of toxin detoxified by means of sodium ricinoleate without the disadvantage of serum sensitization. This accomplishment unquestionably will be a distinct improvement over the present method employed.

The occurrence of sudden shock reaction following the administration of serums to children who have been immunized previously by toxin-antitoxin injections undoubtedly is far more common than a survey of the literature indicates. Through conversation the writer has found a considerable number of physicians who have had similar experiences which are not reported. In order to profit by the extensive experience of a large number of physicians the writer wishes to request physicians to inform him as to similar cases they have observed, including information as to the suddenness of the onset of symptoms, their severity and the period that had elapsed since diphtheria toxin antitoxin had been administered and other details of importance.

## REFERENCE

Stewart, C. A.: Anaphylactic reactions following the administration of serums to children previously immunized against diphtheria. *Jour. of the A. M. A.*, 86: 113, 1926.



## PROCEEDINGS OF THE MINNEAPOLIS CLINICAL CLUB

Meeting of November 18, 1926

The November meeting of the Clinical Club was a joint meeting with the St. Paul Clinical Club, held at the Town and Country Club on Thursday evening, November 18, 1926. Dinner was served at 6:30, and the meeting was called to order immediately after the dinner by Dr. R. C. Webb, President of the Minneapolis Clinical Club.

Dr. Webb introduced Dr. Hilding Berglund, Chief of the Department of Medicine at the University Medical School, who gave a talk illustrated with numerous lantern slides, on "Induced Large Variations of the Urinary Proteins in Bright's Disease, Particularly in Nephritis."

## DISCUSSION

DR. SCHLUTZ (Minneapolis): I am very much impressed with Dr. Berglund's result. He had not taken me into his confidence, so I did not know until now what a fine piece of research he was really doing. I recall several interesting points. There is apparently a striking and constant relationship between the globulin excreted and the serum-globulin, or what Dr. Berglund thought was serum-globulin. It will be interesting, indeed, to know what this fraction really is if it is not serum-globulin. I know that this will be a point of attack for Dr. Berglund.

I was somewhat in doubt whether the first case Dr. Berglund mentioned was really a case of nephrosis. This case seemed to take care of water very well. A child with nephrosis is very unequal to adequate water or salt metabolism.

DR. BERGLUND: The first case reported was not a nephrosis case. I did not intend to convey that impression.

DR. SCHLUTZ: No determinations of this sort, to my knowledge, have been carried out on children. I do not know, I am sure, whether the behavior of the kidney in nephrosis in the child or juvenile would be the same as in the adult. There may be decided differences.

DR. HENSEL (St. Paul): It is really not possible for one who has not been carrying on similar studies adequately to discuss such a splendid piece of work.

I can, however, voice my appreciation of Dr. Berglund's fine presentation. I feel, too, that the University students are fortunate to be under his guidance, and such work as he is doing should be a constant stimulation to them.

From such studies will come an understanding of that obscure condition which we term *Nephrosis*. The chief problem in nephrosis seems to be a disturbance in protein metabolism. This leads us to refer to Epstein's theories in which he postulates a similarity between nephrosis and myxedema, both being conditions of disturbed protein metabolism. Sixty per cent of his cases of nephrosis showed

lowered metabolic rates from minus 10 per cent to minus 22 per cent. He got results by feeding enormous doses of thyroid extract and thyroxin, in the course of time reducing many of his cases to a dry state free from dropsy. He would not go so far as to state that these cases were myxedematous, but he believed that they had many features in common. The thyroid extract seemed to improve or speed up the metabolism so that the body could better handle the proteins.

A very interesting statement was the reference to the cactus plants of the desert, and the similarity of their water and protein content to that of the tissues in myxedema.

Dr. Edward Schons, President, of the St. Paul Clinical Club, then took the chair and introduced Dr. Harry P. Ritchie, of St. Paul, who gave a lantern slide talk on "Tissue Transplants in General."

## DISCUSSION

DR. GEORGE GEIST (St. Paul) discussed the paper.

DR. HAYES (Minneapolis): As both Drs. Geist, and Ritchie have already stated, it is close attention to details that accounts for results in these cases. Dr. Geist has called attention to the transplantation of kidneys. I had the privilege of observing the clinical course of the animal in which Dr. Dederer transplanted the kidney to the cervical area, attached it to the cervical vessels, and had it function as in its normal position. He removed the other kidney and the dog appeared quite normal for some time. Urine dripped almost constantly from the neck. Many animals had to be sacrificed before the transplant proved successful. This, of course, merely showed what might be accomplished in the way of transplantation, but was not of any practical importance at the time. In this transplantation work, no doubt the skin transplant is the one of most importance, and Dr. Ritchie is to be congratulated in the work he is doing to teach us how to preserve skin transplants.

Close attention to preparation of the open surface, preservation of the blood supply, and care of the area following the transplant are the factors which determine success, in this work. One type of skin flap that interested me especially during the World War, was the type we used to close wounds following extensive débridement. Frequently an area from four to six inches wide was covered over by shaving off the surface of the wound, then undermining the skin and subcutaneous tissue about the wound until this could be stretched across the wound and held by retention sutures. The skin edges were then united and usually primary union was obtained if proper attention was given to details.

There is no doubt that the average surgeon has so little of this work to do that he fails to develop proper technic and does not get a satisfactory result.

Dr. Ritchie has given us some excellent ideas to ponder on. We need some one who studies this

condition as he does to take the lead and teach the art of skin transplanting.

DR. JONES (St. Paul): I have heard Dr. Ritchie speak on this type of work several times, and I become more enthusiastic each time I hear him. My results in transplanting ovarian tissue have been very disappointing.

Preparation of the surface to be grafted is a very important part of any grafting operation. The first time I saw the small thick graft used was at the Rockefeller Institute, and they were using Dakin's technic to prepare the surface to be grafted, and the results were very good.

I referred a sixty-year-old woman with a cleft palate to Dr. Ritchie last year, and he obtained a wonderful result. I believe such results are the best evidence of the skillful and scientific work Dr. Ritchie is carrying on.

DR. SOUBA (Minneapolis): My experience in transplants has been limited to the ovary. I have made transplantation on several occasions in the rectus muscle, as well as into the horn of the uterus. On two or three occasions the patient continued to menstruate for five or six months and then ceased. I cannot say that the cases I have operated on have been successful.

DR. CHATTERTON (St. Paul): I am sure we enjoyed Dr. Ritchie's paper and wish you to know that he does wonderful reconstruction work and practically all of the work at the Gillette State Hospital. We occasionally do a muscle-flap operation, transferring the body of a muscle into the body of a paralyzed muscle, practically the same principle as a tendon transference. You can also use the entire fibula as a flap, cutting it off at the upper and lower epiphyses and transferring it into the tibia and have the fibula grow and develop so that it is practically the same size as the tibia.

DR. WYNNE (Minneapolis): I have seen just one successful ovarian graft. The patient was a young negro girl. A bilateral oöphorectomy and an autograft of a large piece of ovary in the right rectus muscle had been done. She came to the dispensary about a year and a half after operation complaining of a swelling in her side during menstruation. She had menstruated regularly since the operation. There was no evidence at that time of cystic degeneration of the graft.

DR. WEBB (Minneapolis): I feel that our societies are very fortunate to have the opportunity to listen to this very interesting presentation by Dr. Ritchie. His work has greatly interested me during the years in which I have had an opportunity to observe it. So much of our surgery is destructive, in that we are constantly taking out diseased organs, it is little wonder that a master surgeon should attempt particularly in his charity work, to get away from the routine "ectomies" and devote his time to the constructive surgery which Dr. Ritchie has shown us to-night.

The small deep grafts of Dr. Staige Davis, which have been mentioned, first came to my attention in 1912, when, as a student, I saw him using them on the chronic leg ulcers which had been coming to the dispensary for as many as twenty years.

The transplantation of organs is a source of much

interest, and it is well known that they usually lose their identity and are replaced by scar tissue. Several years ago Dr. E. W. Andrews presented a method of taking down a gastro-enterostomy by using a cuff of stomach wall to cover the defect in the wall of the jejunum thereby preventing a stricture of the jejunum at this point. The ultimate fate of this stomach wall when deprived of its original blood and nerve supply and transferred from an acid to an alkaline medium immediately interested me, and I did some gastro-enterostomies on dogs and took them down by this method, and after six months I removed the specimens from the dogs. Sections of this portion of the intestine showed the transplanted stomach tissue with normal glandular arrangement and with the parietal and chief cells showing in the same manner as sections of the normal stomach. I am wondering if Dr. Ritchie has any further observations on the transplantation of stomach wall in this manner in his work.

DR. HENSEL (St. Paul): I want to add just a word to what Dr. Webb said about persistence of the type of cells transplanted. Dr. Julius Bauer last summer mentioned the case of a woman with a large defect on the back of her left hand following injury which was repaired by a thick skin graft from the abdominal wall. In later years of life when she became fat, this grafted area on the back of the hand took on fat, as did the abdominal wall, while the ungrafted hand showed no such change. This seems to be a similar instance to Dr. Webb's case where the transplanted cells remained true to type in their new location.

DR. DORNBLASER (Minneapolis): I have not done any tissue transplants since my hospital days, but Dr. Ritchie's paper reminded me of a case we saw at that time of a woman who was burned over the back of both legs and buttocks and up to waist-line. We did this small deep tissue transplant over that whole area, a small portion at a time. I am glad to say the woman left the hospital and was able to move all the parts without any contraction.

One thing that interested me was that Dr. Ritchie spoke of having to put pressure on the grafts to make them grow. That was what we found—that we had to straighten out all the grafts to prevent curling and then put pressure on them. We usually used fenestrated sheets of rubber tissue, which kept the dressing from sticking to the wound.

We also found that the skin would not grow up or down. It had to grow over a flat surface. If the granulations became too exuberant we had to cut them off, and then the grafts quickly covered the surface and united with each other.

DR. CARTER (St. Paul): A short time ago I was in New York and was very much interested in some tissue-transference work which is being done at the Willard Parker Hospital in connection with chronic "tube" cases. These are cases which originally were intubated to relieve the obstructive symptoms of laryngeal diphtheria. Subsequently the patients were unable to dispense with the tubes and became chronic "tube" cases. At the time this work was undertaken there were about thirty such cases at the Willard Parker Hospital requiring constant medical surveillance. In a year's time about twenty of these



thirty patients, who had been maintained for years by the city, had been returned to the normal channels of life, and it was hoped that another year would find the remaining ten also returned to their homes.

The operative procedure consists of doing a laryngotomy, following which the skin edges are sutured to the mucous membrane lining the trachea. After sufficient time has elapsed to permit of union of skin and mucous membrane, closure is gradually effected by inverting sufficient skin to form a new trachea. Final closure is effected by undermining the skin on both sides and drawing together over the new trachea.

I mention these meagre details of a very wonderful piece of reconstructive surgery to illustrate a further application of some of the principles and possibilities in the field which Dr. Ritchie has so ably discussed for us this evening.

DR. PHELPS (Minneapolis): I should like to refer to two points: First, about fat transplants. Dr. Ritchie's idea, that the fat itself is absorbed and the reticular substance remains, is in accord with the teachings in most eye hospitals. Then, when a fat transplant is made into an orbit following enucleation, a piece of fascia is always placed with the fat. Certainly, the size of the transplant decreases greatly as a few months go by.

The next is concerning corneal transplants. A recent report from the Rockefeller Foundation mentions a successful graft from the cornea of one eye to that of the other in animals (cats).

DR. RITCHIE (in closing): I am greatly gratified at the extended discussion, showing that you were really interested in the subject, and that every one of you had paid attention to it. This material appears in the literature as more or less minor surgery, and I think it is quite generally so considered in active work, but, as I have tried to impress upon you, it is full of most interesting problems, not only in the selection of procedures but in the exacting and at times seemingly trivial operative steps. Tissue transplants in some form is the oldest form of surgery, has received the attention of succeeding generations of surgeons and to such an extent and with such close study that it appears impossible to suggest or think of anything new. But along with other fields of surgery there is now the effort to determine direct terms of description, classifying and grouping, agreement upon principles, and location of a great lot of technical tricks in relation to those principles.

Tissue transplants have been most widely considered with the possibilities of skin transference. I find in studying it, in spite of the vast literature, there is still confusion in terms and application. And as I suggested, this confusion is immediately erased if we speak of a free graft as a graft only, because in its preparation that tissue is physiologically dead, and careful preparation must be made for its revival or it anatomically dies. The flap, however,

is always live tissue. If you treat live tissue as though it were dead, and dead tissue as though it were live, then failure is surely invited. In other words, the graft and flap are two absolutely divorced surgical principles with nothing in common between them. It is the application of one or the other or both in a given case, the large possible variety in choice, location, extent, and combination that makes this such a fascinating field of surgery.

I have carried these two principles of dead and live tissue to other tissues of the body, with of course a great deal of speculation, to see whether each would fit into one principle or the other, or both.

I do not know that I can answer all of your questions.

Dr. Phelps' case is a graft, that is, dead tissue transplanted, and is a remarkable thing in such delicate tissue.

Dr. Webb speaks of his interesting experiments in the Dr. E. W. Andrews' technic in undoing a gastro-enterostomy. The stomach cuff comes under the division of flap because the blood supply is established by contact with the duodenum. Of course it lives. I would not guess what that cuff looks like at a late period. There is a great amount of clinical evidence to prove that tissue transplanted assumes to a very great degree the look and function of the tissues to which it is transferred. For instance, a Thiersch skin graft placed in the mouth does very well as mucous membrane. Probably the cuff undergoes a change.

Dr. Carter's cases show what wonderful things can be done in reconstruction. These are sliding flaps of live tissue. This plan is quite similar to the repair of hypospadias.

Dr. Chatterton's case of the use of the fibula to substitute the tibia, is again live tissue used. It is rather strained to consider such as a flap, but the operation comes under this principle.

The gland transplants come under the graft. The batting average of success must be the very lowest. To think that a complicated anatomical and physiological structure, such as a gland, can be severed from its blood supply and then re-assume its function in another location appears to me to exceed the possibilities of the tissue. But, as Dr. Wynne and Dr. Geist have said, there may be clinical evidence that the gland may still functionate. Dr. Berglund has checked me up. I am not sure what I mean by *primary* and *secondary* tissue except a hazy idea that those that do things, produce something, and are physiologically active, are different from purely structural ones. The tissue cultures are marvelous to me, and I believe that in such studies we are going to find principles which will guide us in this great field of reconstructive surgery.

DONALD MCCARTHY, M.D.

Secretary

# THE JOURNAL-LANCET

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## PROCRUSTES

In reading a book review by Simeon Strunsky in the *New York Times Book Review* for February 20, our attention was called to the book which is mentioned above as the title of this editorial. Mr. Strunsky says: "The old Hellenic world continues to yield happy titles for the use of Messrs. E. P. Dutton and Company's little red books in the Day and Tomorrow Series." It seems that Procrustes, who was the well-known proprietor of a rigidly unadjustable bedstead, was a mythical robber in Greece, who, when his victim was captured, proceeded to adjust him to the bed. He sometimes found it necessary to stretch the victim's limbs until they assumed the right length, or in some instances he was obliged to amputate a limb in order to fit the victim to his bed.

Mr. M. A. Pink has taken this question up and has applied it to the future of English education, and he points out the inequalities and the uncertain attitude of educators toward the present-day system. His introductory chapter is a quotation from Bernard Shaw in which this celebrated author remarks: "Every blessed founding nowadays is snapped up in his infancy by Bernado homes or School Board Officers or Boards of Guardians; and if he shows the least ability he is fastened on by school masters,

trained to win scholarships like a race horse; crammed with second-hand ideas; drilled and disciplined in docility and what they call good taste; and lamed for life, so he is fit only for nothing but teaching."

Then he goes on and criticizes the present methods of education, and his main theme is that we must train a child for the station to which, not by birth, but by natural capacity, the child properly belongs. That is to say, there are many children who go to the public schools and who are obliged to cease their schooling at the age of fourteen to sixteen years. The cause of their dissociation may be lack of means, lack of time, the necessity of going to work, and, too, the inability to absorb dull methods beyond these years, and that only in comparatively few, relatively speaking, can education be carried much farther because of the incapacity of the individual. Those who are capacitated can be taken on through various degrees of education and ultimately many become the intelligensia of the country.

Mr. Pink urges, still further, that our method of education should adopt itself to the people of lower standards and to seek out the best possible occupation for carrying on their life work. We know perfectly well that there are any number of smart children in our public schools, and, provided they are carefully directed, they become not only the foundation, the bulwark of the nation, but they acquire a degree of self-education that not infrequently far surpasses the so-called educated classes. That the separation of pupils in our educational institutions cannot be successfully carried on with present methods without great loss of time, without attempting to over-educate those who are uneducable, and to slow up the education of those who are better students and better fitted for higher education, so it is the boy of to-day that is the one who must be considered, and in some way he should be given an opportunity to show his normal bent for his future work.

This suggestion has already been carried out in our kindergarten schools in which the teacher discovers very often the natural inclination of the child and if carried on it might be possible to segregate certain pupils who have an inclination for business, for industry, for invention, or for manufacturing institutions. It also should include the statement that everybody is not capable of being educated, that a considerable number of children cannot go beyond a very sharply defined age. There are too many dull children, and there are some clever children, but to at-



tempt to influence the dull child beyond his comprehension is an actual waste of time.

"We must get rid of the prevalent notion that schools are factories (chiefly brain factories) which can pass any sort of human material through a standardized course and in so many years turn out satisfactory finished products." So that it seems very probable if we take more into account, than at present, of the profound differences in individual capacities, we shall cease to think of his education as something extraneous to the person educated and to regard the school curriculum as a Procrustian bed to suit the dimensions to which the child's mentality can be extended or truncated as required.

#### A NEW BROADCASTING POSSIBILITY

It seems to be reasonably evident that the medical profession is still hiding behind the cloak of mysticism when it comes to the question of increasing the knowledge of the people toward the activities of medical men. Most of us are afraid to indulge in a little publicity, however carefully it may be arranged, and if anything of that sort gets out the unfortunate man whose name has been mentioned usually becomes a center of censure.

However, it is necessary for the people to know something about what the doctors are trying to do. They should be told in plain, simple language what has been accomplished in medicine and how these things may be presented to the people without undue sensitiveness. It is proposed now that a new broadcasting of medical subjects may be carried on by the Physicians' and Surgeons' Exchange which is located between the two cities. It is the expectation of the promoters of this new and better method to have papers prepared and presented for censorship by the state broadcasting committee and then broadcasted at certain times so they may appear on the program of the published radio hours. With this method no names are mentioned and even if there are it would be no breach of confidence to say that this theory or proposition would be sponsored by some prominent medical man or medical men. As a matter of public education this might be carried to very distant parts of the state or to the cities or particularly to the isolated towns or farmhouses with great efficiency and would lay the foundation for a better knowledge of medical topics than the average person has at the present time.

The Journal-Lancet sees no reason why this cannot be done as it is supposed to be under prop-

er supervision without the least fear of incurring anyone's displeasure and with the hope that the broadcasting methods may contain some very useful and pertinent medical information. At least it has been brought to the proper authorities and will doubtless be sponsored by the State Association and will be taken care of in a perfectly legitimate way.

First aid of all sorts could safely be given over the radio, both medical and surgical; warnings in regard to epidemics of whatever sort; methods of protection; and perhaps the description of certain typical contagious diseases might influence the patient or his family to see that a doctor was summoned at once, although this is not the idea that the broadcasting station has in mind, but to tell the people what is necessary for them to know. It is really strange that so many of the people know nothing about the different kinds of medicine, the different kinds of specialties and different kinds of healing, and they should be informed. How to do it and what to say can safely be left with the committee of the state society and we hope the matter will speedily be made public.

#### THE DOCTOR IN NEWSPAPERDOM

The various papers that are printed all over the country and in which a part of a column of medical information is carried are probably entertaining the people to a marvelous degree of comfort and safety, and it is very easily determined when one asks a question to find out where the information comes from. "Oh, yes, I read Doctor So-and-so in such and such a paper," and of course that is taken authentically, seriously, or sometimes flippantly. But in the main we think the average medical writer for the daily press tries to get in some commonsense, wholesome advice that tells people how to take care of themselves. He does not always succeed and he is not always right, but he certainly has dipped into the business of the medical men more seriously than he knows because we find now that patients come in and tell us so many things they have a smattering knowledge of that we are quite sure they got it from the newspaper, and it is often difficult at times to disabuse their minds of what is right and what is not right.

At all events, a great many people come to the conclusion that this side-stepping medical advice publicly proclaimed and gullibly received is, on the whole, a good thing, consequently they follow the newspaper doctor and take care of themselves, often with good results, sometimes

with a very unfortunate delay. Perhaps we doctors take ourselves altogether too seriously at times, and think that our advice ought to be very carefully chosen and very carefully dispensed. Some of us are prone to be chary with advice; others give too much advice, leaving the patient with the idea that his condition is a very serious one when as a matter of fact it is an ordinary commonplace affair. We do not always take the trouble to explain the fundamental condition to the patient; for instance, we do not often like to tell our patients that they are suffering from an inferiority complex, or, as one of the writer's patients said the other day, she had an "inferiority duplex." We assumed she meant her head one plex and her feet the other. To tell patients that they are suffering from a complex of any kind is an insinuation that to them is insulting because they consider themselves, if suffering from a complex at all, it is of the superiority type and how very often do we have to wink the other eye. Oh no, really, it is very inferior and much more inferior than the patient has any idea.

Then, too, we think we are lax in our advice to people about the ordinary common care of themselves, and we do not attempt to explain a few things in detail and ask them to follow instructions and then finally to see that they do it. Much suffering could be saved by following the doctor's orders absolutely, but it often proves to be too much trouble for the patient and he goes on as he pleases, and we, of course, get the blame for non-progress in the medical case.

There is another type of men who tell the patients almost nothing. They look wise, they shake their heads, and write a prescription and say to come back in one, two, three, or four weeks, and when interrogated by the patient their replies are almost unintelligible, but they get the reputation for being sphinx-like, wise-men, and somehow or other they get away with it, and the patient thinks they know all about them and after they get better they believe more and more thoroughly that the silent Doctor So-and-so is the very man for them. We have one very good friend who can say so little and do so little for the patient that he is beloved by all of them.

There is another side to the story, a funny side, and it is related by one of these newspaper doctors. The medical staff of a small hospital was holding a regular monthly meeting, when there suddenly came in a call for a pulmotor. The attendants hurriedly tried to find it, but no one knew where it was kept, and when someone

did find it they found it to be out of order. So, instead of sending elsewhere, the doctors started a full discussion of the situation. One of them, a man of dignity and weight, said he had understood there was some other method of artificial respiration which had been found as effective as a machine, and none of the other learned doctors of the hospital staff—(this is part of the joke, for it does seem that pull, social standing, lodge membership, and about everything else but professional ability bring hospital staff appointments)—no other member of the hospital staff knew anything about artificial respiration, or, if any member did know, he dared not raise his voice after the grand mogul had presented his views. So they appointed a committee to study the subject, and in the meantime what became of the patient? Perhaps he died from over-discussion of a pulmotor topic. Perhaps they got a pulmotor in time. Let us hope they did. So this man, this doctor says, we doctors in convention assembled are forever appointing committees to look into the subject, and the committee usually consists of the man who knows nothing about the subject whatever, and the other members of the committee are the ones who bring in the information, so it would be wise to keep this point in mind, that committees sometimes do not function in their expected order.

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#### AMOS WILSON ABBOTT

Minnesota has lost one of its most eminent physicians in the death of Dr. Abbott, which occurred in Minneapolis on Sunday, February 27, 1927. He was one of the rare men in medicine in that, with all of his many sterling qualities, he was first and foremost a student of medicine, and during the earlier days of his practice in Minneapolis he took up and carefully studied various specialties. Notwithstanding that he was a surgeon in his last years, he was a medical man in the early years and maintained a practice among all classes of people, but grounded himself in many of the branches of medicine which the average specialist pays but little attention to. For that reason he was an all-round practitioner.

Then, too, his personal character was such as to exert a profound influence upon other professional men. He had a calm, quiet, and courteous manner; he was always a gentleman; he was never ruffled, whatever his task might be; he had the rare facility of being unhurried, and



one might almost think that he was unworried about his work and his methods. But those who knew him best know he was keenly interested in all of his professional work and had the confidence of not only the professional men but the people in his community. Everyone respected him for his courteous, kindly, and gentle manner and, too, for his treatment of the younger man in medicine. Many could testify in the medical profession in Minneapolis what Dr. Abbott had taught them in the way of the *art* of medicine; that is, his approach, his attendance upon his patient, his interest, and his careful analysis of the situation which confronted him, so that, in spite of the advancement of the various special departments in medicine, he retained until the last a true understanding of the art and ethics in medicine.

The writer does not believe that anyone can recall an unkind, ungracious, or unmannerly act on the part of Dr. Abbott. He had many trials and tribulations, many causes for anxiety and worry that were subdued, and he thought only of his patient and his profession. He was also a man who was unsparing in his attitude toward others and was not attracted by the financial side of his patient's situation, but did what he could for the individual. Only ten days before his death he went to call on a servant in the household of a family here, and, very unwisely perhaps, he climbed three flights of stairs to see this woman who had always been his patient. This doubtless added something to his attack of heart-block.

An instance of his keenness and his courtliness was when he turned over to one of the younger surgeons a man who had fallen out of a second-story window and broken his leg and fractured his skull. The young surgeon made the dressings and made the man as comfortable as was possible, but after three days he told Dr. Abbott that he was very much worried about the patient because he had not regained consciousness, and Dr. Abbott in his quiet, reassuring way asked him if he remembered what he worried about a year ago that day, and when the young man failed to recall any such instance, Dr. Abbott said, "You were perhaps looking at it with the same anxiety as you do now," in this way reassuring the young man and giving him just what he needed, something to tie to and relieve him of his anxiety of the case which promptly recovered. A number of instances of this kind could be told of Dr. Abbott.

Dr. Abbott was instrumental in promoting many medical plans that later matured into a

definite policy for medical men.

Amos Wilson Abbott, son of Amos Abbott and Anstice Wilson, missionaries, was born in Ahmednugger, India, on January 6, 1844. His education, interrupted by the American Civil War while he was at Dartmouth, was obtained in four colleges. He was graduated by the College of Physicians and Surgeons, New York, receiving his degree of Doctor of Medicine. After practicing medicine in the east for a few years, he came to Minneapolis in 1877.

Dr. Abbott taught anatomy in the St. Paul Medical College, and, in 1881, he assisted in founding the Minnesota College Hospital, in which he was Professor of Anatomy and later served as Professor of Gynecology. Later still he became associated in the same capacity with the Medical School of the University of Minnesota and held an emeritus professorship there until his death. At various times he had served on the hospital staff of St. Barnabas, Northwestern, and Abbott Hospitals. In conjunction with Dr. J. Clark Stewart and Dr. F. F. Westbrook, Dr. Abbott founded the Minnesota Pathological Society. He held a number of offices in various medical organizations, having served as president of the Hennepin County Medical Society, the Minnesota State Medical Society, the Academy of Medicine, the Pathological Society, and the Western Surgical Association. He was a member of the American Medical Association and had the distinction of being the first delegate to the first House of Delegates of this organization.

Abbott Hospital, which was constructed with funds donated by the late William Hood Dunwoody, was founded by Dr. Abbott.

Dr. Abbott spent 53 years of his 83 years of life in the medical profession, the last half century in Minneapolis. Surviving him are his wife, who was Miss Helen G. Wright, of Delhi, N. Y., and three children; Mrs. Lyndon King, Miss Elizabeth Abbott, and Wilson Abbott, all of Minneapolis. He was a Mason, and he held a membership in the Lafayette Club.

NOTE.—Further memorials to Dr. Abbott will appear in our next issue.

## MISCELLANY

### WHAT IS A PREVENTORIUM?

The National Tuberculosis Association with headquarters in New York City has from time to time endeavored to formulate procedures for the purposes of uniformity in the diagnosis and care of tuber-

culosis. Recently the National Association, in answer to requests from several localities, felt called upon to discuss and, if possible, formulate some general standardization for preventoria. For years the Association had fostered the so-called "open-air" school, open-window class rooms, and summer camps. The question now presented for them to discuss was the definition of and the relationship to other institutions of a preventorium. Dr. Henry Sewall, president of the National Tuberculosis Association, appointed a committee of physicians and tuberculosis workers to discuss the problem of preventoria and appointed Dr. H. D. Chadwick, of the Massachusetts Department of Health, as chairman. This committee as appointed was composed of Dr. J. Burns Amberson, of Northville, Mich; Dr. Chesley Bush of Livermore, Calif; Dr. Roy P. Forbes of Denver, Colo; Dr. F. E. Harrington of Minneapolis, Minn.; Dr. Alfred H. Hess of New York City; Dr. Clarence L. Hyde of East Akron, Ohio; Dr. Edward J. Rogers of Pittsford, Vt.; Dr. John Wyckoff of New York City; and Mr. Homer Folks of New York City; together with Dr. H. E. Kleinschmidt, Supervisor Medical Service of the National Tuberculosis Association, and the chairman of the committee.

This committee met in New York City in the offices of the National Tuberculosis Association on February 9. At the roll call Dr. Chadwick, Dr. Harrington, Dr. Hyde, Dr. Rogers, and Dr. Wyckoff of the committee were present. In addition to these members Mr. George J. Nelback of the New York State Charities Aid Association, and Miss H. Bibb, representing Dr. Hess, were also present. Dr. Amberson, Dr. Bush, Dr. Forbes, and Dr. Hess were unable to attend the meeting. The question for discussion having been mailed to the members of the Association, Dr. Bush of California wrote a lengthy discussion on the question which was taken by the committee as the expression of his views.

Dr. Kleinschmidt acted as secretary to the committee, and Mr. T. B. Kidner, consulting engineer, came in during the meeting.

As a result of this conference the committee recommended to the Association for action by its Board of Directors the following definition of a preventorium:

"A preventorium is a twenty-four hour, twelve months' institution for the care and observation of children sub-standard in health,"

The men selected by Dr. Sewall as a committee representing the last word in tuberculosis in the country brought to the meeting an expression of opinion from all sections of the United States. Minnesota, and especially Minneapolis, in the selection of Dr. F. E. Harrington was recognized as one section of the country from which the tuberculosis question could receive valuable discussion and criticism. We feel that the National Tuberculosis Association exercised excellent judgment in calling to its conference table the Commissioner of Health of the city of Minneapolis and the originator and director of the only preventorium school established in the country and at the present writing the outstanding childhood tuberculosis school for the study of childhood tuberculosis yet established.

A Minnesota physician (a regular) publishes the following card in his local newspaper:

## CASH DISCOUNTS ON MEDICAL BILLS

### NOTICE

Dr. ——— wishes to announce that, beginning March 1, 1927, he will conduct his business on what is known as the Annual Cash System and in addition special discounts for cash.

The following discounts will be effective: 20% at time of call; 10% in 30 days; 5% in 60 days; after 60 days, net. The idea of the cash discount is self-evident and means a very definite saving to everyone.

## BOOK NOTICES

**THE TIRED CHILD.** By Max Seham, M.D., Assistant Professor of Pediatrics, University of Minnesota, and Greta Seham, Ph.D., formerly Professor of Medical Chemistry, University of Minnesota, with a foreword by Isaac A. Abt, M.D. Illustrated. Price, \$2.00. Philadelphia and London: J. B. Lippincott Company.

This is one of the best books of recent publications and excels all other books on the subject. We understand that it has been heartily endorsed by many pediatricians, and Dr. Isaac A. Abt, of Chicago, has written a foreword in which he speaks of the high pressure of life to-day, the constantly changing mode of living, and especially the prevalence of apartment-home life with changed habits of living for children, and irregular hours of eating and sleeping which have made the problem of fatigue in children a common one.

Dr. Max Seham and Dr. Greta Seham, the former an assistant professor of pediatrics at the University of Minnesota, and the latter formerly a professor of medical chemistry in the same institution, have combined their efforts and written a book which is necessary, not only to physicians, but to the people in general, especially mothers and, incidentally, fathers, because the average child grows up under the influence of the mother rather than the father. But the fact is the mother is largely responsible, although the father may think he is, until the child reaches the period of development, that is, toward the age of puberty, when both parents should be equally responsible for the upbringing of the child. It is conceded by all who think about these subjects that the bringing up of a child to-day is a much more complex problem than it was even ten years ago, and certainly far different from what it was twenty years ago. The pediatrician has cleared a good deal of the child atmosphere in his advice to parents and the frequent inspection of the child and his reiteration of methods and manners, as well as feeding and rest.

This volume, which will speak for itself even on brief inspection, will have a large sale in cities and should have an equally large sale in the country, and there are many more in general practice in small towns and country places that would benefit by the reading and study of a volume of this kind. It is written in a very simple, easy style, and it covers the field of child management. In the country, of course, children are mostly allowed to grow up without much restraint or restriction in their conduct or living, and if associated with an unfortunate hereditary imbalance and bad surroundings it is not strange that so many country children fail



to grow and develop during the critical epochs in their lives. If the doctor and the teacher would join hands in instructing parents at public meetings they would be surprised to find how much of their advice sank into fertile soil.

Dr. Seham begins with "The Fundamental Principles Underlying Work and Fatigue," and he speaks of the Normal Child, Physical and Mental Growth of the Child, Peculiarities of the Physiology of Childhood, and Work and Efficiency. All this he has carefully studied out, and his reading must have been enormous in order to bring out the best of what it is necessary for parents to know and children to do. He thinks that from the age of ten years until puberty the mental and emotional maturation processes proceed rapidly. "With the anatomical growth of the brain and of the nervous system near completion, the development of the higher centers of thinking well on the way, there comes to the child greater independence and confidence which at times even reaches the point of recklessness." At this time, unless parents are properly instructed, they are apt either to repress or suppress the activities of the growing boy or girl, whereas if they knew how to proceed and how to permit the child to develop they would find their influence was far greater and the effects more lasting, and then, naturally, the after-growth between puberty and adolescence would be more highly satisfactory.

In Part II of the book, Dr. Seham takes up "Fatigue and Associated Factors," which are of equal importance to his fundamental principles. In this part he speaks of the "Nature of Fatigue," "Warning Signals of Fatigue," "Recognition of Fatigue," a condition which is too frequently overlooked, "The Influence of Heredity," "Eye Strain as a Cause of Fatigue" (this came into its own some time ago, but cannot too often be reiterated), also "The Relation Between Impaired Hearing and Fatigue," which is very important. Then, too, the "Effect of Infectious Diseases on General Resistance," is commented on. We are convinced that too little attention is paid to this very important matter because it may be the stumbling block which precipitates the fortunate or unfortunate future of the child. "Malnutrition and Fatigue" should appeal to everyone, yet the writer doubts whether parents appreciate this very important thing. How many times do we find a child who is ill nourished, who is pushed to the limit because the parents fail to recognize the danger posts in front of them. The author questions, too, whether fatigue and nervousness are synonymous, and he calls attention to the fact that many children are labeled "nervous," while in reality they are suffering from a chronic fatigue as a result of overwork. Think of a child devoting ten or twelve hours every day to work, who then has practically no time left for play or leisure. We know that the future is hard enough at best, and the child should be given a great deal of latitude, as well as a great deal of rest and playtime. Evidently there is a time coming when the importance of the relation between fatigue and nervousness will be more clearly recognized, but not under our present system of education, for if that does anything it contributes to the continued fatigue and undernourishment of the child.

Dr. Seham speaks, too, of "Posture and Fatigue," "Fatigue in Infancy," and "Fatigue in Puberty." It is extremely important to recognize fatigue in infancy although it is perhaps very difficult except for the trained pediatrician; but it ought to be easily recognized at puberty. In this chapter the author calls attention to the fact that shoes should be chosen for comfort, and if this idea can be instilled in the child mind perhaps it will stick in the mother's mind. How often we see an adult walking down the street in a low pump with a high heel, limping along or walking in a stilted fashion, simply because she thinks her shoes look well, when, as a matter of fact, it does not look well at all.

In another chapter the author gives some true stories of tired children which illustrate the whole second part of his book; they are very interesting, and show, in a few well-defined cases, how the conditions of the children are brought about and why there are so many failures.

Part III is taken up with the "Prevention of Chronic Fatigue" and the "Management of the Tired Child," and is the most interesting part of the book from a medical point of view and perhaps from the parent point of view. In it he gives his idea of the prevention of chronic fatigue and management of the tired child, the rôle of school and teacher, as well as what the parent can do, health habits, the importance of food and rest, as well as sleep, play and recreation, the social side of our children, economic problems, home study, and the study of music, and mental hygiene. One can see readily how great a field this part of the volume covers, and how important each chapter is.

We believe if this book is properly read by parents, teachers, and doctors it will do more to revolutionize the race in the next generation than anything that has been accomplished heretofore. We commend the book for its clearness and common-sense advice. As has been said before, the author must have read a tremendous number of volumes and articles in order to produce such a work, which shows that the author is a student, an observer, and a safe advisor.

—W. A. JONES, M.D.

## NEWS ITEMS

Dr. M. G. Milan has moved from Warren to St. Paul.

Dr. A. M. Fisher, of Bismarck, N. D., was appointed physician for Burleigh County last week.

The Wittenberg Hospital Association of Williston, N. D., has decided to erect a new hospital building.

Dr. Walter R. Ramsey's Children's Hospital of St. Paul will have a new hospital building, to be erected this spring.

Dr. Harold C. Stratte's removal to Pine City, to become associated with his brother, leaves Lancaster without a physician.

Dr. W. H. Goeckerman, of the Mayo Clinic, will spend the next two months visiting clinics in Italy, France, Germany, and England.

Dr. T. C. Routley, of Toronto, General Secretary of the Canadian Medical Association, visited the Mayo Clinic during the first week of March.

The dates for the next annual meeting of the South Dakota State Medical Association are May 3, 4, and 5, 1927; and the place of meeting is Huron, S. D.

Dr. Clara E. Hayes, Director, Division of Child Hygiene of the State Board of Health of South Dakota, has resigned to take up work with the American Child Health Association in New York City.

Dr. George H. Coons, of the University of Michigan, gave a Mayo Foundation lecture in Rochester on February 25. His subject was "Some applications of medical research methods to plant pathology."

The Minneapolis Surgical Club elected the following officers at its annual meeting last week: President, Dr. Horatio B. Sweetser; vice-president, Dr. Willard D. White; secretary-treasurer, Dr. Theodore H. Sweetser.

Dr. L. J. Evans, who has been in charge of the Fargo Child Health Demonstration for the past four years, returns to New York on April 1 to continue child demonstration work. His work in Fargo was a marked success.

Dr. William E. Tryon, of Minneapolis, died last week at the age of 64. Dr. Tryon was a graduate of the Bennett Medical College of Chicago, class of '85, and practiced in Minnesota, mostly in Minneapolis, since that date.

Dr. A. W. Abbott, of Minneapolis, died on February 27 just as our last issue was going to press. A brief editorial notice of the passing of this greatly beloved man appeared in that issue, and editorial notice appears in this issue.

Dr. B. F. Smith, Assistant Superintendent of the St. Peter (Minn.) State Hospital, has been appointed Superintendent of the Willmar State Asylum, made vacant by the resignation of Dr. G. T. Baskett, who goes to Pennsylvania.

Dr. Alexander A. Maximow, Professor of Anatomy at the University of Chicago, gave a Mayo Foundation lecture in Rochester on the evening of March 8. His subject was "Some applications of the method of tissue culture to the solution of pathological problems."

Dr. Alexander J. Jameson, of Sentinel Butte, N. D., died last Monday at the age of 63. Dr. Jameson graduated from the College of P. & S. at Indianapolis, Ind., in the class of '88. He practiced in Wheatland, N. D., from 1901 to 1913, when he moved to Sentinel Butte, where he practiced until his death.

At the annual meeting of the Soo Railway Surgical Association in Minneapolis last month the following were elected officers for the current year: President, Dr. Karl W. Doege, Marshfield, Wis.; vice-president, Dr. David J. Twohig, Fond du Lac, Wis.; secretary-treasurer, Dr. John H. Rishmiller, Minneapolis. Winnipeg was selected as the place for the next meeting.

Dr. Frederick J. Souba, of Minneapolis, died on March 7, at the age of 41. Dr. Souba was a graduate of the Medical School of the U. of M., and had been Assistant Professor of Obstetrics and Gynecology in the School for the past ten years. He also engaged in private practice, and was on the staffs of the Northwestern, Fairview, Asbury, and other hospitals in this city.

Fargo (N. D.), and Cass County are planning to make a survey of all crippled children in the city and county with a view to having an examination of such cases made by orthopedic specialists at no expense to the parents. The work will be done under the direction of Dr. William DeKleine, director of the Fargo Child Health Demonstration and the North Dakota Crippled Children's Society.

At the annual meeting of the Upper Mississippi Valley Medical Society, held last week at Brainerd, the following officers were elected: President, Dr. W. B. Kelly, Aitkin; vice-president, Dr. A. V. Garlock, Bemidji; secretary-treasurer, Dr. G. I. Badeau, Brainerd. Papers were presented by Dr. Harry P. Ritchie, of St. Paul; Drs. S. H. Boyer and L. A. Barney, Duluth; Dr. H. Carlson, Brainerd; and Dr. C. H. Pierce, Wadena.

Mr. T. B. Kidner, Consultant on Institutional Planning and Rehabilitation, of New York, presented a splendid address before the annual meeting of the Hennepin County Tuberculosis Association in the Leamington Hotel on February 18. Mr. Kidner was formerly with the National Tuberculosis Association and is now doing splendid work throughout the country. He is especially interested in having vita-glass substituted for ordinary window glass in hospitals.



The consolidation of the Staff of the Minneapolis General Hospital has recently been effected. It will be remembered that up to this time the Staff has been divided into two sections, known as A and B; the former composed of physicians and surgeons who were members of the faculty of the University of Minnesota, and the latter composed of practicing physicians in Minneapolis who were not members of the University faculty, and each section functioning more or less independently. By this action of the Board of Public Welfare the two sections are merged into one and with a full-time Chief of Staff. Dr. George E. Fahr has been chosen for this position.

### The West Central Minnesota Medical Society

The West Central Minnesota Medical Society met at Wheaton, February 19, 1927. The members of the Society and their ladies were the guests of Dr. C. F. Ewing at a six o'clock dinner. The ladies were entertained at a basket-ball game while the doctors gave their scientific program as follows:

#### PROGRAM

"Pneumonia in Children," by Dr. C. M. Pierson, Wheaton, Cholecystitis," by Dr. A. L. Lindberg, Wheaton, "Talks on Fee Bills," Dr. B. V. Bates, Browns Valley.

A general discussion followed the reading of the papers.

The next meeting will be held at Starbuck, April 30, at which meeting the Society will be the guests of Drs. C. R. Christenson, O. V. Opheim, L. L. Gibbon, and H. Linde.

HERMAN LINDE, M.D.  
Secretary

### Northwestern District Medical Society

The regular monthly meeting of the Society was held February 23 at Trinity Hospital, at Minot. The members of the Society were guests of the Hospital at dinner. After the dinner a program was put on by the members of the hospital. Cases were presented by Drs. Nestos, Cameron, Sorensen, Erenfeld, and Carr.

The following resolutions were read:

"God's workmen work in relays, and He has seen fit to call home one of his master workmen, Doctor Adolph Oscar Aaker.

"The cheery, kindly voice, with its oft repeated message of encouragement and hope, is hushed; the busy, efficient hands, with their touch of healing and artistic ability, are still; the fine mind, with its fund of scientific lore and deep appreciation of all the lovely things of life, is at rest, and the Christian spirit has been called back to its Maker.

"Art has lost a conscientious patron, the community a cultured gentleman, and we have lost a loyal co-worker and friend.

"To the loved ones, we would extend the understanding sympathy which lies within our hearts, but it is too deep for idle words.

"We shall miss him sorely but though he was yet in the prime of life he did not fall

'Like dropping leaves that no man noticeth;  
But like a great branch of some stately tree  
Rent in a tempest, and flung down to death,  
Thick with green leafage—so that piteously  
Each passerby that ruin shuddereth,  
And saith: "The gap this branch has left is wide,  
The loss thereof can never be supplied."'

"This expression of sympathy is recorded in the minutes of the Northwestern District Medical Society, and a copy mailed to Mrs. Adolph O. Aaker and sons, Laurence and Donald.

"Dated at Minot this 8th day of February, 1927."

Resolution Committee, ARCHIE D. McCANNEL, M.D.  
P. A. NESTOS, M.D.  
STEPHEN M. JOHNS, M.D.  
ANDREW SINAMARK, M.D.  
Secy-Treas.

### Hennepin County Medical Society

Future programs of the Hennepin County Medical Society meetings:

Meetings are held in the Library rooms of the Donaldson Building, Seventh Street and Nicollet Ave., each Wednesday noon at 1 p. m. (luncheon at 12:30).

Regular monthly meetings are held the first Monday evening of each month. Dinner at 6 p. m. and the meetings are called to order at 7 p. m.

March 16—Wednesday noonday meeting:

Dr. Walter Ude—Osteitis Fibrosa Cystica. Report of a case.

Dr. Russell Noice—Primary Sarcoma of the Thymus.

March 23—Wednesday noonday meeting:

Dr. W. P. Larson and Dr. Howard L. Eder (University of Minnesota Medical School!)—The Results of the Immunization with the Combined Scarlet and Diphtheria Toxins.

March 30—Wednesday noonday meeting:

Dr. J. P. Hiebert—Ether oil—Morphin—Magnesium Sulphate Analgesia in Labor. Report of 100 cases.

The Monday evening meeting, April 4, will be a combined meeting with the Lymanhurst Hospital Staff, at which time Dr. Allen K. Krause, of the Johns Hopkins Research Laboratory, Baltimore, Md., is to be the speaker. Details of the meeting will be announced later.

ERLING W. HANSEN, M.D.  
Secretary

### South Dakota State Hospital Association

A group of South Dakota hospital surgeons and executive officers met in Huron, S. D., on the first of March and organized a state hospital association under the above name. Dr. R. L. Murdy, of Aberdeen, was chosen chairman, and Mr. D. L. Braskamp, of Aberdeen, was chosen secretary of the meeting. After a presentation by Dr. Murdy of the aims of the meeting, it was decided to ask all hospitals in the state to send representatives to a meeting in Huron on May 2d, for the first convention of the association.

It was pointed out that the good of all the hospitals in the state, about sixty in number, and the

good of the public could best be served by organization and it is believed that all such hospitals will join the new association.

Officers for the first year were elected as follows:

President, Dr. F. E. Clough, Home-stake hospital, Lead; vice-president, Sister Flavia, Sacred Heart hospital, Yankton; executive secretary, D. L. Braskamp, Lincoln hospital, Aberdeen; trustees, Dr. R. S. Westaby, New Madison hospital, Madison; E. W. Anderson, Luther Hospital Association, Watertown.

#### Addresses by Dr. Allan K. Krause

Dr. Allan K. Krause, Director of Tuberculosis, Johns Hopkins University; editor of *American Review of Tuberculosis*; American editor of *Tubercle*; author of numerous publications of which the following are some: "Rest and Other Things," "Environment and Resistance in Tuberculosis," "The Anatomical Structure of Tubercle from Histogenesis to Cavity," and others; and also the author of a large number of articles in various American and foreign medical journals, is visiting the Twin Cities and other points in Minnesota at the invitation of the Medical Staff of the Lymanhurst School.

On Monday evening, April 4, 1927, at the Nicollet Hotel, at 6:30 p. m., Dr. Krause will be the orator of the evening at the annual banquet of the Lymanhurst Medical Staff, held in his honor with the co-operation of the Hennepin County Medical Society; the Minnesota State Public Health Association; the Minnesota Trudeau Medical Society; the Hennepin County Tuberculosis Association. His subject will be—"The Trend of the Medical and Surgical Aspects in Pulmonary Tuberculosis," which will be the outstanding address of his series.

Dr. Krause will also deliver the following addresses:

Before the Graduate School, student body and faculty, University of Minnesota, Tuesday, April 5, at 4:30 p. m., on the University Campus.

The annual address of Alpha Omega Alpha on "Landmarks from Laennec to Trudeau," in the anatomy Amphitheater, University of Minnesota Medical School, April 5, at 8:00 p. m.

Before the Open Forum, Saint Paul Athletic Club, Wednesday, April 6, at 12:30 p. m.

The Mayo Foundation lecture at Rochester, Minnesota, Thursday, April 7, at 8:00 p. m.

An address to Medical School, and student body, at the University of Minnesota, Friday, April 8. He will address various organizations in Duluth, Saturday, April 9.

#### Physician Wants Location

An experienced physician wants to locate in a farming country; Catholic community preferred. Address 338, care of this office.

#### Practice for Sale

An unopposed practice in town of 600 in Northern Minn., in heart of Lake Region. A large territory, hospital facilities near by, fine roads, good schools and churches. Cash business from \$7,000 to \$8,000 a year. Am asking \$3,000 for fine nine-room modern residence and office equipment. Must quit general practice on account of my health. Address 325, care of this office.

#### Books for Sale

Tice's Practice of Medicine, ten volumes; desk index and three extra binders, at half price, \$55.00. Address 331, care of this office.

#### Apparatus for Sale

Diatherm Wappler Excell Model; new with a very complete line of accessories. Substantial discount. Cash or terms. Address 335, care of this office.

#### Practice for Sale

An unopposed \$4,000 annual practice in North Dakota is offered for sale for \$100, which will include office furniture. Am specializing. Address 334, care of this office.

#### A Good Opening

For an eye, ear, nose, and throat man, also a children's specialist in a city of 25,000. In good farming community not far from the Twin Cities. Address 330, care of this office.

#### Locum Tenens Work Wanted

A well-equipped and experienced physician is at liberty for some time to assist and substitute for a physician inside or outside the Twin Cities. Best of references. Address 328, care of this office.

#### Minneapolis Office Furniture and Lease for Sale

I am leaving the city. Office furniture and lease for sale very cheap. Good opening in fine part of city for a young man. Address 337, care of this office.

#### Technician Wants Position in Community Hospital

Graduate technician, with three years experience and with two years nurse's training. Willing to assist with the nursing when not busy in laboratory. Best of references. Address 336, care of this office.

#### Office Space Offered in Minneapolis

A very desirable office with a firm of established dentists is offered to a physician at low rental. School within one block of office with 2,000 children. Overhead expense small. A Catholic preferred. Address Dentist, 3800 Grand Ave., Minneapolis.

#### Physician Wanted

Eye, Ear, Nose, and Throat. To become associated with a group of physicians in Minneapolis. New clinical building. X-ray and clinical laboratories. Free office expense until established. Also wanted, an associate in General Practice and Surgery on salary. Address 329, care of this office.

#### Large Minnesota Practice for Sale

Large obstetrical and general practice in city of 4,000, eighteen miles from Minneapolis. Will introduce and give to my successor a good business from the start. Established eight years. Collections \$60,000.00. Home and office built four years ago, perfectly modern and up to date. Ideal for a doctor. Best location in city. This is a high-grade proposition, and I want to hear from a live man at once. Reason for selling, specializing. Address 332, care of this office.



# THE JOURNAL-LANCET

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## HOW FAR HAS THE NEWER WORK ON BRIGHT'S DISEASE HELPED US IN DIAGNOSIS AND TREATMENT\*

BY HILDING BERGLUND, M.D.

Department of Medicine, University of Minnesota  
MINNEAPOLIS, MINN.

Having the opportunity to-day to speak before a large group of doctors experienced in the practice of medicine I feel free to assume that all the fundamental clinical facts about nephritis, which can be easily observed at the bedside, are familiar to the most of you. In my discussion of the subject "How far the newer work on Bright's disease helps us in its diagnosis and treatment"? I shall, therefore, draw freely upon your own experiences.

Since the days when most of us left the medical school there has been a great deal of work done on nephritis, and, for the sake of convenience, I should like to divide this work into four different groups. In the first group I include work on experimental nephritis, work on functional diagnosis, and as a subdivision the work on blood chemistry. In the second group let us consider some of the efforts towards the clarification of the etiology of nephritis. If we combine the efforts laid down in the first group with that of the second this leads us to new efforts toward a more satisfactory classification of nephritis. I call this the third group, if you please. In the fourth group we will deal with the treatment and prognosis.

There has been an enormous amount of work done on experimental nephritis, both in this country and abroad. High aspiring hopes to demon-

strate the function of the different parts of the kidney were attached to the work of Schlayer and his co-workers in Munich—hopes that failed. However, the work of Schlayer put before us in definite form the problem which symptoms in a case of nephritis can be correlated with changes in the glomeruli and which with changes in the tubuli, a question not yet fully settled. One of the disappointments about experimental nephritis has been the great difficulty in producing in animals a chronic kidney lesion progressive in character, as is the chronic human glomerulonephritis. Most types of experimental nephritis result in acute damage, leading either to death or recovery. It has, therefore, little or no bearing on one of the most fundamental points in human nephritis, which is to find the factor or factors that make the disease go on and on damaging the kidney more and more, covering sometimes a period as long as two decades. Some very recent experimental work ought perhaps to be mentioned. A condition exceedingly similar to a chronic glomerulonephritis in man has recently been produced in monkeys by repeated injections of certain strains of streptococci. This work has been done and is being continued by Drs. Bell and Clawson in the Department of Pathology in Minneapolis, in the University of Minnesota. Dr. Clawson has also succeeded in reduplicating in rabbits the focal nephritis which occurs in subacute bacterial endocarditis. He has suc-

\*Presented before the Missouri Valley Medical Society, at Omaha, Neb., September, 1926.

ceeded by simultaneous intravenous injections of a fine suspension of agar and a streptococcus strain.

Turning to the rôle of blood chemistry as an aid in the handling of nephritis I wish to remind you that the first practical method for the determination of the non-protein nitrogen of the blood was introduced by Strauss in Berlin in 1902. He applied his new method extensively in a memorable study of chronic nephritis, in which study the retention of the nitrogenous waste products as an indication of a developing uremia was first brought out. In this country the first work on blood chemistry was done by Folin and Denis. When they entered this field their interest was entirely different. It was for the sake of the study of the absorption of the proteins from the intestinal tract that they developed their methods for blood-urea nitrogen and non-protein nitrogen. This early work has been continued, and is still being continued by Folin and his co-workers and has led to his famous "System of Blood Analysis" of 1920. It is interesting and exceedingly pleasing to note that the intricate details of the problem of blood chemistry have attracted the attention of a greater number of prominent chemists in this country than in any other part of the world. I cannot refrain from mentioning the names of S. R. Benedict, D. D. Van Slyke, Victor Myers in this country; the name of Ivar Bang of Sweden and Hagedorn of Denmark. Perhaps the name of the early deceased John Feigl in Hamburg should also be mentioned.

In the course of time a great number of functional tests have been developed, used for a while and again abandoned from our routine procedures. Two have survived—the phthalein test and the water test. The phthalein test developed, as you recall, in Professor Abel's laboratory at Johns Hopkins still enjoys a most extensive use in this country and somewhat less abroad. The water test is particularly used and appreciated on the European Continent and in Scandinavia; decidedly less in this country. It aims to give information about the ability of the kidney to excrete water, to produce a dilute urine, and again to produce a highly concentrated urine. The procedure is as simple as possible. A liter of water is taken on an empty stomach at 8:00 A. M. Hourly collections of urine are made from 8:00 A. M. to noon; thereafter three-hourly collections, at 3:00 P. M. and 6:00 P. M. A dry luncheon is taken at noon as the first meal of the day, and no extra water is allowed until after 6:00 P. M. Extra-renal factors, particularly

dehydration, high summer temperatures, edema, and decompensation of the heart influence the test. With these factors taken into consideration the interpretation of the test is both interesting and instructive. Looking upon our endeavors towards a functional diagnosis it can be said about all of them, possibly with the exception of the water test, that they all try to inform us about something that is being retained by the diseased kidney, and from a practical point of view this is important enough. For a complete understanding, however, of the symptoms produced in nephritis this information is incomplete and somewhat negative. There is not a single test whose aim it is to tell us about products lost through the leaking kidney, products that ought to be retained. There is, of course, one exception to this statement,—the old well-known, but not always very well-done, test for albumin in the urine. It is hardly likely, however, that the albumin is the only compound which escapes through a diseased kidney while it ought to be retained, but on this point our knowledge is still scarce. It suffices to add that the body might be injured just as well by the loss of compounds that should be held back as by the retention of compounds that ought to be excreted. It is likely that this is particularly the case in the peculiar disease that is more and more commonly given the name of *chronic nephrosis*.

The functional tests are valuable. There is no doubt about this point, but the value depends altogether upon the intelligence with which we interpret them. Particularly there is no one functional test which will or can tell us the whole story. Take, for instance, a case of acute nephritis. The urine has fairly well cleared up. You do a phthalein test and it gives a 55 per cent return in two hours—a satisfactory result, but at the same time a microscopic examination of the urine might show numerous red-blood cells in the sediment, which means that there is still a pathological process present in the glomeruli, and if you take the blood pressure you might find it elevated up to around 160 or 170 mm. Hg. This elevation might seem to persist, indicating that there is still some kind of a spasmodic condition prevailing somewhere in the finer blood vessels. In another case the situation might be the opposite. The blood pressure might be back to normal within a few days of an acute onset, but the phthalein test might show a low output.

I have called to your attention these combinations only to win your agreement that there is no single test or sign which alone allows us to pass judgment on the condition of the diseased kidney.



Let us look into the etiology of nephritis. It is well known to everybody that acute nephritis is very frequently caused by the streptococcus infection of the tonsils, also that scarlet fever nephritis is equally dependent on infection. The recent interesting development of our conception of scarlet fever brings out rather clearly a question of probably more than theoretical importance as to the origin of a nephritis. Usually several days, up to almost two weeks, may elapse after the onset of a sore throat before the acute nephritis develops, and if it is a severe one and develops suddenly it may lead to temporary anuria and give the impression that the whole kidney is attacked at the same time. It is likely, but not quite generally agreed upon, that the acute glomerulonephritis is the result of a toxic injury somewhat in the same way as we are being taught that the scarlet fever rash is the result of a streptococcus toxin. If it is correct that in the acute nephritis we have to deal with a specific localization of a bacterial toxin it seems as if the field is open for therapeutic or preventive efforts along immunological lines.

Besides this diffuse and toxic glomerular injury there also exists, however, an embolic glomerulonephritis, well known to all of us from the cases of subacute bacterial endocarditis which we have had the sad duty to take care of, and seemingly reduplicated in the experimental work of Clawson, already mentioned.

There are other toxic products produced in the course of chronic suppurative infections which seem to attack the tubuli chiefly and leave the glomeruli untouched, or at least free from the ordinary type of glomerulitis that we have just referred to. To this group belong the cases of nephrosis which we see develop in patients with a chronic empyema, a chronic osteomyelitis, a chronic indurative tuberculosis, and also in cases of syphilis. The syphilitic nephrosis seems to be of considerable interest, and it seems to me that it is being more frequently observed in Europe than in the United States.

My purpose with this enumeration of the etiological factors is to try to bring Bright's disease, to a certain extent at least, in among the preventable diseases. "If preventable, why not prevented" is a stringent remark once made by the late King Edward VII, which just comes to my mind.

### III

On the basis of functional disturbances, etiological considerations, clinical picture, and histological changes, many efforts have been made

to arrive at a new and more satisfactory classification of the old good Bright's disease. In some of these efforts one of the aspects just mentioned has been given a dominating place in the classification; in other efforts another aspect. As a pure clinical classification Christian's is undoubtedly most to the point. As an effort to arrive at a synthesis of all the factors enumerated above the classification of Volhard and Fahr, already more than twelve years old, remains the most interesting. It is amusing to note the degree of excitement produced by these different classifications, not so much among the original contributors themselves as among the minor stars following at their heels. After all, classification is not of great enough importance to cause excitement provided one knows what one is talking about.

A great deal of credit must go to Volhard and Fahr for their beautiful monograph of 1914. There is one point brought out by these authors to which I wish to call particular attention, and that is their viewpoint that every case of chronic nephritis is due to an acute nephritis which never healed. No doubt this statement is approximately correct, or at least correct enough to place a heavy burden of responsibility upon everyone who takes care of a case of acute nephritis. Every case of acute nephritis fully healed is one case fewer of chronic nephritis. Though many of the cases of acute nephritis heal in a few weeks others take months, and sometimes one strikes a case which shows a continuous improvement extending over a whole year. One of the most important factors in our treatment of acute nephritis undoubtedly is the continued confinement of the patient to bed. Enforcement of this point not infrequently gives the doctor considerable difficulty. When the patient has reached a certain stage of convalescence he feels well and wants to get out of bed, and it does not impress him very strongly when the doctor tells him that there are still red-blood cells in his urinary sediment, and that he has to continue in bed perhaps a few months more. I think everybody should do his best to make his patients follow his advice on this point. Most cases of acute nephritis occur in young people, and their time is not so valuable. They can more easily afford to spend months in bed, just as a patient with pulmonary tuberculosis has to do. Personally, I try to keep the patient in bed as long as any improvement can be shown along any of the lines already outlined, and I am not willing to let him out of bed until at least a month or possibly two months have

shown no further improvement. The somewhat academic point of Volhard and Fahr that all cases of chronic nephritis have developed out of an acute nephritis thus leads to a very important practical conclusion. Do your best to cure every case of acute nephritis.

There is another very important point brought out for the first time in the classification of Volhard and Fahr. This is to be found in their treatise on hypertension. All of us recognize the simple or benign hypertension extending over decades and frequently ending either by cerebral hemorrhage or even more commonly by a decompensation of the heart. But there are a few cases that die from an insufficient kidney function, and Volhard and Fahr were among the first, if not the first, to distinguish this malignant type from the more benign one. From the point of view of prognosis this distinction is a point of importance for all of us. The distinguished Swedish physician, Magnus Huss, used to emphasize to his students in the 1830s and 1840s that the secret of success for a physician lay in a correct prognosis, and perhaps his statement still holds true.

We should not fail to recognize a case of malignant hypertension, with its high pulse rate, increasing amount of albumin in the urine, and the development of an almost nephritic sediment. This, combined with a slow piling up of waste products in the blood and a fatal end within a couple of years in true uremia, distinguishes this disease from the benign hypertension.

Talking about hypertension, I cannot omit to mention the interesting work carried on by ophthalmologists and clinicians in coöperation, and particularly must the name of Foster Moore, of St. Bartholomew Hospital in London, not be forgotten. I think to the internist as well as to the general practitioner his book "Medical Ophthalmology" should not be unknown. What has Foster Moore shown? He has shown that there are certain types of changes in the finer vessels of the retina present in a great number of cases of hypertension. By studying these blood-vessel changes in the eye-grounds, instead of in the kidneys, he has broadened our viewpoint and made us again remember that we must never look upon any disease as a disease of one particular organ, that we must never neglect to examine and consider the changes that take place in the body as a whole. You know about those changes that you find in arteriosclerosis of the retinal vessels, the typical kink in a vein when it is crossed over by a thickened artery and the uneven, sometimes almost pearl string-like

appearance of the arteries or the generally constricted, exceedingly narrow arteries. Thus I have mentioned only the points beyond dispute. In this connection a question comes up which is of great interest. Is the elevation of the blood pressure due to a temporary spasm or to a permanent constriction? The question is a fundamental one and an unanswered one, and one which will be difficult to settle. However, as far as the changes in the eye-grounds go, it is worth while to recall the observations of Moore and others, that the retinal artery showing a certain type of constriction to-day will show exactly the same picture three years, five years hence.

We can hardly afford to leave this interesting point without passing on to the still more interesting one about the curability of hypertension. Here we escape theoretical speculations and enter a more appealing field of experimental work. All of us, I am sure, follow with the greatest interest and the warmest hopes for success the work which is now being carried out by Ralph Major, of Kansas City. Dr. Major seems to have proved that the injection of methylguanidin in dogs produces an elevation of the blood pressure of longer duration than has hitherto been produced. He seems also to have shown that under certain circumstances a substance still unknown can be extracted from the liver, a substance apparently free from peptone, as well as from histamin, which substance injected into the same dog causes this already produced elevation of the blood pressure to disappear. These results are most stimulating. When we appreciate that the chemical work necessary for these experiments is most difficult, I am sure we all hope that the keen experimenter will not tire or become discouraged before definite and clear-cut results have been obtained. Major is careful in his comments upon the clinical applicability of his liver extract, and undoubtedly much more experimental work is needed before any judgment can be passed upon the practical value of this indeed interesting work.

Just a word as to treatment. In our dietetic treatment, which is of great importance, we have tried to avoid a diet which causes a retention of nitrogenous products or of salt, but we have no doubt neglected the positive side, that is, to see that we really give all that is needed. Cases of chronic nephritis or nephrosis which have been on a low protein diet for months or perhaps years might show a high-grade depletion of their body proteins. Recently Peters in New Haven has called attention to this important fact and



shown that it might take weeks of high-protein diet before this deficit has been made up and nitrogen equilibrium again reached.

Every case of chronic kidney disease is more or less an individual problem and cannot be handled in a schematic way, particularly if large amounts of albumin are being lost in the urine. This has to be taken into consideration in the composition of the diet and it seems correct to take the standpoint that the patient shall be given as much protein as he can handle without any piling up of urea in his blood. Often we have seen cases get worse on a very restricted diet and have seen them leave the hospital and break the dietary regulations and improve. If we try the same procedure on hospital cases we not infrequently find both a clinical improvement and what might be called a laboratory improvement. The fact that on a high-protein diet larger amounts of albumin are being lost in the urine than on a low protein diet must not scare us. The increased urinary proteins under these conditions are no signs of kidney damage. Their more or less passive leakage is not entirely similar to a glycosuria in diabetes but is somewhat on the same order.

There is one point where we actually lack knowledge enough to know what to do, and that is in making up the mineral content of the diet. We see in the course of a chronic nephritis or nephrosis periods where the urine is alkaline because of large amounts of fixed base. The constancy of the body supply of fixed base is responsible for the constancy of the osmotic pressure of the body. Therefore a dangerous condition may be produced during this period of alkaline urine and it is a fact that the nephrosis cases particularly show a very low resistance towards intercurrent infections, especially those due to pneumococci. Shall we give more alkali to cases that lose alkali or not? I have no answer to offer, I only wish to raise the question. As a matter of fact in the treatment of edematous conditions we are in a peculiar situation. If we remove edema, as we frequently can by the use of proper diuretics, we please and satisfy the patient, but we remove something that involves very little danger to him. We probably do not influence the course of the disease, and as soon as the patient leaves the bed or the strict régime his edema is apt to recur.

In closing, a word about the preventive as well as the curative rôle of the cleaning up of foci of infection. In these days nothing much is needed to be said on this point, but I shall use this last minute to remind you in this con-

nection of the rôle of staphylococcus infections of the sinuses, particularly in children, and the effect of a proper attack upon these foci, a field which recently has been so beautifully illuminated by the work from the Department of Pediatrics at Washington University, St. Louis. This work, as well as work from many other places along similar lines, is an encouraging promise that kidney disease as a preventable disease soon will become, as far as possible, prevented.

#### CLINICAL CASES

CASE 1.—Acute glomerulonephritis with complete recovery.

This young girl, Margaret, is thirteen years of age now and perfectly well in every respect. In September, 1922, however, she had blood in her urine. Since May of that year she had been nauseated and has had spells of vomiting. It was noticed during part of that time that the urine was dark in color. This color was determined to be due to the presence of blood. Besides the vomiting and the nausea she seemed to have had no other suggestive symptoms, particularly no headaches. She was in bed from May to July, 1922, for about six weeks. Before this sickness she had had measles three years earlier; tonsillectomy was performed six years earlier; and her adenoids had been removed twice. When seen in the fall of 1922 her blood pressure was normal. There was a slight anemia. The urine showed a fair amount of albumin, but no sugar. The phthalein test was normal. Besides red-blood cells her sediment contained hyaline and granular casts. No infected foci were found. She was put to bed and spent about a year in bed, and was not permitted to get up until the red cells had disappeared from the urine. She then had only a slight residual albuminuria, which has since cleared up.

There are two points in connection with this case that I wish to discuss briefly: First, the statement in the history that the urine was dark in color. This statement often leads to misunderstandings and mistakes, particularly among students and young internes, who easily take it for granted that it signifies something abnormal. Not infrequently do you get the information that there is blood in the urine, although this has been determined neither microscopically nor chemically. All concentrated urines are dark, and if they are left to stand they turn still darker. A patient with a small twenty-four hour output and a large amount of albumin often describes the urine as very dark and very thick, and when the phosphates come down in such urine sometimes it actually looks almost like coffee, and yet there might be no blood present. In a typical nephrosis there is never any blood macroscopically or even microscopically. Red-blood cells are missing as a rule.

What is the color of the urine which contains blood, and how much blood does it take to give a characteristic color? A dilute urine light in color may very well show a sediment of red-blood cells. One c.c. of blood poured into a liter of normal urine gives enough color to make you suspect the presence of blood on ocular inspection. The color of blood containing urine is well described as water in which meat has been washed—a dirty reddish color. If the urine is concentrated and left to stand you might lose your red-blood cells, thus the necessity of making it a habit to use only fresh urine specimens for sediment examinations.

While talking about urine color we might mention other cases of dark or unusual color of the urine. This is hematuria. This is a rare disease, but the diagnosis is rarer. One runs across it without recognizing it. The urine is dark-red like Burgundy, sometimes brownish. The condition is either inborn or acquired. Among the acquired forms the occurrence after the taking of sulphonal or allied drugs is more frequently observed. But the inborn form is the most interesting because of the peculiar photosensitiveness these individuals present. The skin lesion produced in this disease by exposure to bright light is feared and known among dermatologists under the name of hydroa vacciniform. The spectroscopic examination of the urine is necessary for the diagnosis of the pigment. In this connection let me make the remark that physical methods are entering more and more into medicine just as chemical methods entered decades ago.

There is another rare form of dark urine—alkaptonuria, a condition which seems to persist over the greater part of the lifetime, and leads to an interesting clinical picture described as ochronosis or blue ears. Here the urine turns dark or almost black when it becomes alkaline, particularly by the addition of ammonia. A fresh acid urine might be normal in color. This may sound like fancy stuff to you, but it might be of practical importance to anyone of us once in a while and that is in connection with life-insurance work. In doing the sugar test on such a urine the copper becomes reduced, but the solution also turns dark and the result is confusing. The case I saw was through a life insurance company.

Let me say one more word about our laboratory procedure, and that is about the atypical appearance of the red cells that come from a nephritis kidney compared with the cells that come from a surgical lesion in the genito-urinary

tract, a bleeding papilloma of the bladder, for instance. In this latter case the red cells look just about the same as the red cells in the blood with their concave shape preserved. This concavity is usually lost in the red cells in a nephritis sediment. It is sometimes very difficult to recognize red cells in a sediment.

Let us leave this laboratory discussion and return to our patient, if you please.

The fact that is interesting in this case is the long time it took to obtain complete healing. We talked about this earlier, and this patient is a good illustration of the ultimate success which often follows persistency in keeping the patient in bed.

A question which I am sure interests all of us is whether the kidney in the future will show any lower resistance towards new infections. I hardly think so, but here opinions differ and exact knowledge is missing. Dr. Emerson of Indianapolis, who is a most interesting philosopher on medical matters, gave me a great deal to think about when he brought out his belief that an increased susceptibility during later life might be present in a case like this. It is likely that it is in cases of this kind that periodic health examination would be of particular benefit and give us more valuable information than the periodic health examination during the later part of life. Talking about periodic health examination I cannot help quoting Joslin's slogan "Have your urine tested on your birthday."

#### DISCUSSION

DR. A. B. SOMERS (Omaha): "What are the prospects of that young woman if about ten years from now she becomes pregnant?"

DR. BERGLUND: This is a most interesting point brought out by Dr. Somers. It is not very likely that there exists any positive correlation between toxemia of pregnancy and previous kidney lesions. Toxemia in pregnancy is most common with the first child, and it is much more common with twins than with single babies. Every obstetrician agrees upon this point.

DR. SOMERS: May not that girl have sufficient kidney power to carry her through normal life in good condition, but if you come to something that tests those kidneys, like pregnancy or even pneumonia, that would show the return of some of those things?

DR. BERGLUND: Maybe. We have to admit the possible correctness of this line of reasoning, but if we look for facts as they are available to-day we find that the toxic product or products which seriously affect the kidney during pregnancy affect the blood vessels primarily so as to produce an elevation of the blood pressure as the outstanding symptom. Changes in the kidneys in toxemia are not those of an ordinary glomerulonephritis. Red-blood cells,



for instance, are absent until convulsions occur or have occurred.

DR. SOMERS: You see a woman who has married and given a history of perfect health with this exception: She had the ordinary childhood diseases, diphtheria and scarlet fever. Very soon after she becomes pregnant she shows an insufficiency of the kidneys that becomes alarming.

DR. BERGLUND: If the urine shows something abnormal during the first three or four months of her pregnancy then most likely she has an acute nephritis. We sometimes see such an acute nephritis, and sometimes even see it heal up. The pregnancy goes on, and at the time of delivery the urine might be normal again and she may get her baby without any toxemia.

DR. SOMERS: They do not always go on.

DR. BERGLUND: A toxemic kidney, as a rule, does not develop until the last two or three months.

DR. SOMERS: Is not that girl, supposing she becomes pregnant, liable to experience the return of this very thing she has had?

DR. F. P. HEAGY (Omaha): What are the chances for that girl developing chronic interstitial nephritis when past fifty.

DR. BERGLUND: If she develops anything when past fifty it is probably a hypertension, and we know very little or nothing about the etiology of hypertension. In some cases there might be a family disposition; in other cases there seems to be a professional disposition as, for instance, bankers, politicians, and people living a life of strain and excitement. This latter group also frequently develops a mild diabetes. Sometimes these patients are decidedly overweight.

CASE 2. Chronic glomerulonephritis, advanced stage with kidney insufficiency.

We see here a married woman, mother of three children, age 41, who started in 1921 to complain of headaches and vomiting. The symptoms at that time recurred about every ten days. The headache came on in the morning while dressing and continued throughout the day.

The complaints noticed in 1921 are still present but are more marked now than in the beginning. The patient has noticed a swelling of the ankles in the afternoon but never suffered any generalized edema. In 1922 the patient had a typical acute gall-bladder attack and has had several such attacks since then. She has, however, never been jaundiced. In 1921 there was albumin, casts of various types, and red-blood cells present in the urine. A phthalein test in 1921 showed a 75 per cent return in two hours. In 1921 there were albumin, casts of various types, and cryptic. They have since been removed. The gall-bladder, however, is still there. In 1923, which is now three years ago, typical changes were first found in the eye-grounds. At that time these presented papillary edema. Now, besides the papillary edema, also white cotton-like exudates and hemorrhages are present. Her vision is poor. The patient's hearing has been poor for a number of years so we do not disturb her by discussing her history.

At present her urinary findings remain about the same as has already been described. Her blood pressure is markedly elevated, about 200 m.m. Hg. The phthalein test gives less than 20 per cent return in two hours, and her blood urea nitrogen is above 50 milligrams per 100 c.c. of blood. She presents at the present marked anemia of secondary type.

You all notice the marked yellowness of this patient. It is not easy to describe her skin color more accurately, as a matter of fact any observations of skin colors made by artificial light are of doubtful value, but when I saw the patient outside this hall she presented that pale, almost dirty yellowness which is so characteristic of cases of chronic nephritis. You agree with me that this paleness is different from the more marked yellowness which we see in pernicious anemia, and it is also different from the white translucent paleness in a post-hemorrhagic secondary anemia. Of course, it is different from the skin color in marked jaundice, but it is not very much different from what we see in a disappearing jaundice. In this latter condition the chief difference from what we observe in this woman is the yellowness of the sclera of the eyes. On the subject of the color of the skin the experienced clinician is able to give us better information than the laboratory. All laboratory pigment work is difficult and the reports we get at the present (on bilirubin for instance) are not based on very strong chemical work. It requires no keenness to predict that the development of spectroscopic work in our clinical laboratories will eventually give us much more reliable information about pigments than we can obtain today by chemical means.

There was a point in the history that I wish to return to for a minute; her morning headaches. You noticed they come on as soon as she starts to move around and continue throughout the day. Not infrequently we meet patients who tell us they wake up with headaches which, however, disappear as soon as they get busy with their morning's work. These are, as a rule, neurotic patients with some worries which they are able to forget when all the little duties of the day begin to occupy their minds. But here the story is different.

Another point of interest in this case is the comparatively long duration of life, measured from the time when her retinal changes were first observed. We all know, of course, that the majority of cases with a typical renal retinitis die within a year—60 per cent to 80 per cent varying a little in different statistics. There are, however, cases observed where the patient has enjoyed apparent health for as long as seven years after the first occurrence of the eye symptoms.

As to the retinal changes present we do correctly call them typical of chronic glomerulonephritis. The same picture has been seen once in a great while in cases of trench nephritis, and we not infrequently see the same during pregnancy. Its prognostic significance, however, is entirely different in chronic nephritis and in pregnancy. In this latter condition hardly any prognosis can be based upon the eye-ground changes since both the white exudates and the general edema of the retina frequently clear up entirely in the course of a few months after either a normal delivery or an induced emptying of the uterus. Even a detachment of the retina, this usual-

ly and correctly feared condition, has not infrequently a good prognosis when it occurs in connection with pregnancy.

Retinal hemorrhages have less significance than the exudates and the papillary edema. They are usually present with the other changes in chronic nephritis but they might also be present as the only, or practically only, eye-sign in simple hypertension.

Before leaving the ophthalmoscopic findings let me also refer to malignant hypertension. Here the same changes might develop as in an ordinary chronic glomerulonephritis. This never happens in a simple hypertension of a benign type. The only finding beyond what we talked about yesterday which might be, but seldom is, present in simple hypertension is a star figure more or less developed and made up of small white spots in the region around the yellow spot. This, however, is an entirely different story and a rare finding in simple hypertension.

The etiology in this case is obscure. The rapid downward progress is evident. Infected foci have been present during this downward course. The tonsils have been removed but it has not been pos-

sible earlier to arrange for the removal of the gall-bladder. The value of such a step now is doubtful.

#### DISCUSSION

DR. A. B. SOMERS (Omaha): My experience has been limited, but I believe if we can wipe scarlet fever off the map so that we do not have these recognized and unrecognized cases of acute nephritis in infancy, we will have less trouble when it comes to pregnancy.

DR. BERGLUND: The ordinary scarlet fever nephritis is different from the acute glomerulonephritis. The histological picture is different, in the scarlet fever nephritis particularly characterized by the considerable interstitial proliferation of large cells. More important, the prognosis is also different. It is very seldom that the scarlet fever nephritis becomes chronic. This was brought out many years ago by a follow-up examination of a great number of cases by Ernberg in Stockholm, and it has recently been confirmed by a careful investigation from Denmark.

## MEMORIALS TO DR. AMOS WILSON ABBOTT

BY HIS ASSOCIATES IN THE ABBOTT HOSPITAL

Presented at a Staff Meeting, March 8, 1927

BY SUSAN E. HOLMES

Superintendent of the Hospital

Dr. Abbott was born of missionary parents in Ahmadnugger, India, January 6, 1844. When he was a year old his parents were transferring from one missionary station to another, when he, with his Christianized Indian nurse, was kidnapped. The natives were about to kill him, when the nurse reminded them that, according to an Indian superstition, something dire would happen to them if they killed him before sundown. They decided to wait, and the nurse stole away with him, carrying him to his parents.

He came with his parents to the United States when he was four years old and lived in Wilton, N. H. When he was seven, his parents went back to India, leaving him with an aunt, who was of the old New England type, very religious, stern, and unrelenting. One day when he was twelve years old his aunt accused him of breaking a window. When he denied having done so she doubted his word, whereupon he left her home, shifting for himself from that time on. He attended Phillips Andover Academy, working his way. At fifteen he entered Dartmouth. He had been there two years, when the Civil War began, and he enlisted as a drummer boy. He was taken prisoner, confined in Libby Prison,

escaped from there with six others, barely missed being shot. After the war he entered the Pay Department in Washington, where he earned the money to finish his education. While there he roomed next door to the Ford Theater. The night Lincoln was shot he was in the lobby of the theater to see the President enter, though not in the theater at the time of the shooting. He saw Booth on horseback as he tore past his window.

He received his medical education at the college of Physicians and Surgeons, N. Y., and took his internship at the colored hospital on Ellis Island. At the advice of Dr. Hutchinson, who took a great interest in his future, he went to Delhi, N. Y., to practice, where he remained, practicing until 1877, when he came to Minneapolis.

In 1880 he was married to Helen Wright, of Delhi, N. Y.

About 1889 Dr. Abbott opened a small hospital for his patients on Tenth Street. This was continued over a period of about five years. He then closed this hospital, and took his patients to St. Barnabas Hospital, where he was Chief of Staff. His office was at his home on Tenth Street and Harmon Place. Here he maintained a well-equipped laboratory with a young physi-



cian doing his routine work.

On March 5, 1902, he opened the Abbott Hospital in the old double house at 10-12 East Seventeenth Street, a three-story building with high basement, with the dining-room, kitchen, and laundry in the basement. The nurses were housed on the third floor on one side with a well-equipped, good-sized laboratory and interne's room on the other. The first and second floors had rooms for ten patients. The operating-room was on the second floor, the sterilizing was done in one of the old Arnold sterilizers, dressings being sterilized one hour each day for three succeeding days. The water was sterilized in a large galvanized can, with faucet, a gas stove underneath. There was no elevator. The patients were wrapped in blankets, and carried from the operating-room to their rooms by the doctors.

There were five student nurses and one graduate nurse in charge. The first patient operated on in the hospital died. There were no other deaths after this for two and one-half years, the mortality averaged about one per year. The first year 112 operations were performed, seventy being majors.

The Hospital prices ranged from \$15.00 to \$25.00 per week, with no extra charges. The income maintained the Hospital with the exception of one year when Dr. Abbott paid part of the coal bill. It paid nothing on the investment, however.

The capacity was increased to fifteen beds in 1905, by housing the nurses outside the Hospital. The first graduation was held in 1904, with a class of one. It was in this hospital that Dr. Abbott made the first cystoscopy examination done in Minneapolis, also the first nitrous-oxide anesthetic in Minneapolis was given here.

In 1910 the present Dunwoody building was erected for Dr. Abbott, by Mr. Dunwoody, a lifelong friend, as a token of gratitude for the relief given Mrs. Dunwoody following an operation. Ground was broken in October, 1910. The Hospital opened August 28, 1911. Nine patients were moved from the old hospital, and an emergency performed on the one newly admitted patient about noon of the same day. There were twenty-one private rooms and eight ward beds. The twelve student nurses were housed on the third floor. The one graduate nurse in charge was housed in the room on the first floor, which she still occupies. The laundry and kitchens were well equipped for the size of the hospital; though there was no mechanical equipment in the kitchen, the arrangement was convenient, and work

was easily carried on. There were one operating room with sterilizing-room, doctors dressing-room, cystoscopy room, and a good-sized laboratory opposite where Dr. Abbott could carry on the scientific experiments in which he was always so keenly interested.

Mr. Dunwoody died in 1914, leaving the Hospital to Westminster Presbyterian Church with an endowment of \$100,000.00.

#### BY THOS. F. WALLACE

Chairman of the Hospital Committee of Abbott Hospital

On an occasion such as this where we are gathered together to do honor to the memory of one who stood in the forefront of his profession in this community, it is most appropriate that the tributes to his life and work should come principally from those who were fellow laborers in that profession. Those in charge of the program have, however, asked me, as Chairman of the Committee having charge of the affairs of Abbott Hospital on behalf of Westminster Presbyterian Church, to whom the property belongs, to say a few words tonight with respect to the work of Dr. Abbott in connection with this Hospital, since it became the property of the Church.

In 1910, Mr. William H. Dunwoody built the first building at the present site of the Hospital and turned it over to Dr. Abbott for his use, as an evidence of his esteem for him. By the will of Mr. Dunwoody and with the approval and sanction of Dr. Abbott, the title to this property was vested, in 1914, in Westminster Presbyterian Church of this city, together with an income from an endowment of \$100,000 provided for by the same will. Since that date Dr. Abbott, first as lessee and later as chairman of the Executive Staff of the hospital, was the controlling personality in its management.

The influence of Dr. Abbott's life and work was without doubt a decisive factor in causing Mr. and Mrs. T. B. Janney, in 1920, to build the present annex, the Janney pavilion, to be used primarily as a children's hospital, and in later deciding Mr. O. C. Wyman with the cordial approval of his wife and family to leave to the hospital a further sum of \$500,000 to be used at the discretion of the Board of Trustees of Westminster Church in extending and broadening its service and usefulness.

It was not my privilege to know Dr. Abbott in a personal way until the Hospital became the property of the Church in 1914, but from that date it was my good fortune to be somewhat closely associated with him in working out the

various problems arising from its business management, and I soon realized the rare combination of technical skill, and personal charm and tact which made him an outstanding figure not only in his own profession but in the community life of this city. He cherished only the highest ideals, and was ever jealous of the ethics of his profession, and yet I can never remember of hearing him speak ill of anyone. As regards material matters he was most unselfish so far as his own interests were concerned, but he possessed a sound business judgment and common sense which he always exercised when matters pertaining to the conduct of the Hospital were to be decided. With his position and talents he might easily have acquired a considerable fortune, but he preferred to leave the memory of a great life.

It was because he was such a man that he won the friendship of such men as Mr. Dunwoody and Mr. Janney and Mr. Wyman, and it was because they knew that Abbott Hospital was very close to his heart, that they gave of their means so liberally to it.

The Board of Trustees of Westminster Presbyterian Church, because of the work of Dr. Abbott and the gifts of these three men, feel that they have been charged with a sacred trust to carry out the wishes and ideals of those who made this institution a possibility. So far as in us lies, we are willing to give the best that we have to the management of the business affairs of this institution; but we cannot carry out this trust alone and unaided, for the Hospital is a living entity, and in the last analysis, if it is to carry out its true purpose, it will be because of the character and standing of the physicians and surgeons whom it attracts to its staff. We must, accordingly, now look to you gentlemen who constitute the present staff of Abbott Hospital to continue to give to it a whole-hearted and unselfish devotion if we are to maintain the high standards which Dr. Abbott always insisted upon.

A hospital, especially when as in this case it is the property of a Church that professes to believe in and follow out the doctrines of the Great Physician, must not degenerate into a money-making enterprise or even one whose sole purpose is to afford modern methods and conveniences for the care of the sick. And therefore, now that Dr. Abbott is gone, I wish to ask this staff, and each individual member of it, to pledge his loyal and unselfish devotion to maintain this institution as a model, not only of the best service, but the highest ideals of any hospital in the city, for I know of no better way that any

of us can show our appreciation of Dr. Abbott's life, or more truly honor his memory than, from now on, dedicating ourselves whole-heartedly to perfecting and carrying on the work which he so well began.

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BY JOHN W. BELL, M.D.

Member of the Staff of Abbott Hospital

My acquaintance with Dr. Abbott dates back to May, 1881, when, late one night, he was summoned by the husband to visit one of my early and few patients as consultant. His quiet, unpretentious manner, and careful examination of the patient impressed me most favorably. Dr. Abbott was endowed with what Victor Hugo described as uncommon common sense, a most enviable asset, especially to the physician and consultant.

He was well grounded in the fundamentals, especially anatomy and pathology, which added greatly to his strength later, in his chosen field of activity. He was equally skilled in the Art of Medicine—knew how to manage patients, friends and colleagues.

The man, A. W. Abbott, had a correct sense of justice, was able and willing to see the other man's viewpoint, consequently his life was not embittered by contention or strife over trifles—in brief, during life he was guided by the Golden Rule.

He was the happy possessor of a saving grace of humor, of that choice kind which left no sting in its wake. He was one of those just, kind, serene souls with whom it was restful and refreshing to linger. In his presence one ceased to be selfish, envious, or jealous. His was a truly useful life, one which has left its impress and influence on the profession of the Northwest. May we all strive to be like him!

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BY GEORGE DOUGLAS HEAD, M.D.

Member of the Staff of Abbott Hospital

We are gathered here to express our appreciation of the life and work of Amos Wilson Abbott. It is fitting that we, his friends, should thus honor his memory. No words of mine can add one whit to the luster which surrounds the career of this distinguished member of our profession. Those of us who have had the privilege of knowing him well, fully realize the purity of his life, the rugged honesty which characterized all his relations with his professional brethren and his patients, the high character of his scientific attainments, and the lofty purpose which dominated his career.



I first came under the influence of Dr. Abbott's teachings when a medical student thirty-five years ago. His reputation and his place as a leading figure in the profession had been made. In one of his public addresses (*THE JOURNAL-LANCET*, 1922) he has given a vivid picture of that pioneer period. The elements of character which, as a teacher, attracted young men to him were his modesty, his thorough knowledge of his subject, the sound scientific basis upon which that knowledge rested, and the evident honesty and frankness with which he presented his ideas and opinions. In his teaching there was no attempt at a dramatic effect, no verbosity, no tendency to exalt his own ability to the disparagement of his colleagues. All he had to say was presented with the directness and quiet dignity of a really great teacher.

Slowly as the years passed and our relations became those of professional confrères, rather than teacher and student, my regard for him changed from admiration to friendship, which in later years deepened into a real affection, which I now hold as one of the priceless memories of my life.

I have been asked to review something of Dr. Abbott's scientific work and his contributions to medical literature. Early in his career it became quite evident that his reputation would not rest alone upon his skill as a physician and surgeon in the care of the sick, but that he would add to the medical knowledge of his day by contributions out of the richness of his experience and his scientific studies. One of the vivid pictures I shall always carry of him will be his presence in the laboratory, bending over his microscope, studying some interesting pathological specimen. Never during his professional life, even up until the last few months, did his interest in these observations lag. Age never dimmed his eye, nor did the passing years quench his thirst for knowledge of disease.

#### CONTRIBUTIONS TO MEDICAL JOURNALS

His first contribution of which I find record was made in the *N. W. LANCET* of October 1, 1885, read before the Hennepin County Medical Society on the subject of "Antipyrin."

"Antipyrin."—*N. W. LANCET*, 1885.

"The Unnatural Posture during Defecation and its Relation to Constipation, Hemorrhoids, and Uterine Displacement."—*N. W. LANCET*, 1888.

"Anteflexion of the Uterus."—*N. W. LANCET*, 1889.

"A New Rheostat."—*N. W. LANCET*, 1890.

"Note of Some Unusual Cases of Pelvic Abscess."—*N. W. LANCET*, 1890.

"Prolonged Lying-In as a Possible Cause of Subinvolution and Retro-Displacement of the Uterus and Atony of the Pelvic Supporting Musculature and Circulation."—*N. W. LANCET*, 1891.

"Specimens from Three Instructive Cases."—*N. W. LANCET*, 1891.

"Serous Cyst of Mesentery."—*N. W. LANCET*, 1891.

"Bilateral Multiple Myofibromata Springing from the Mesovarium."—*N. W. LANCET*, 1891.

"A Note on the Precise Diagnosis of the Lesions in Old Ruptures of the Perineum."—*N. W. LANCET*, 1892.

"Two Cases Illustrating the Impossibility of Making a Diagnosis in the Early Months of Ectopic Gestation before Rupture."—*N. W. LANCET*, 1892.

"The Precise Diganosis of Lesions in Old Lacerations of the Perineum, with Suggestions as to Treatment."—*N. W. LANCET*, 1892.

"Backward Displacement of the Uterus."—*N. W. LANCET*, 1892.

"The Treatment of Extra-Uterine Pregnancy."—*N. W. LANCET*, 1893.

"The Co-ordination of the Muscles Closing the Urethra, Vagina, and Rectum, and its Application to the Precise Diagnosis and Surgical Treatment of Injuries to the Pelvic Floor."—*Am. Jour. Obst.*, 1893.

"Extra-Uterine Pregnancy."—*N. W. LANCET*, 1894.

"Vaginal Section and Drainage in Pelvic Inflammations, with an Especial View to the Preservation of all the Organs."—*N. W. LANCET*, 1895.

"A Note upon the Approximate Estimation of Urea in Urine."—*N. W. LANCET*, 1897.

"A Report of Thirty Cases of Pelvic Inflammation Operated upon between July 1, 1895, and July 1, 1896, by Vaginal Incision and Drainage."—*Am. Gyn. and Obst. Jour.*, 1897.

"Ovarian Cyst with Twisted Pedicle."—*Med. Dial.*, 1898.

"An Unusual Case of Gallstone."—*N. W. LANCET*, 1898.

"Sinus from Infected Ligature."—*Med. Dial.*, 1898.

"Diet in Typhoid Fever."—*N. W. LANCET*, 1899.

"Symptoms and Diagnosis of Extra-Uterine Pregnancy."—*N. W. LANCET*, 1899.

"Respective Indications for the Anterior Abdominal and the Vaginal Incisions for Pelvic Disease."—*N. W. LANCET*, 1899.

"The Examination of the Sigmoid Colon."—*Am. Jour. Gyn. and Obst.*, 1900.

"The Report of a Case of Acute Fluid Dilatation of the Stomach."—*St. Paul M. J.*, 1904.

"Sterility in Women."—*N. W. LANCET*, 1905.

"The Use of Instruments of Precision in the Diagnosis of Unilateral Disease of the Kidney and Ureter."—*St. Paul M. J.*, 1905.

"Anatomical Anomalies Complicating Appendicitis with report of Two Cases."—*J. Minn. M. Assn.*, 1905.

"Pre-operative Thrombi in the Region of the Field of Operation as a Cause of Post-operative Complication and Death."—*Surg., Gynec. and Obst.*, 1906.

"Nephritic Abscess with Unusual Pathological Conditions."—*J. Minn. M. Assn.*, 1906.

"Gastric and Pyloric Adhesions."—*St. Paul M. J.*, 1907.

"Some Observations upon the Treatment of Retro-Displacement and Prolapse of the Uterus

with Especial Reference to Uterosacral Ligaments."—J. Minn. M. Assn., 1907.

"Diseases in which Frequency and Pain in Urination are Prominent Symptoms, with Some Suggestions as to Diagnostic Technic."—J. Minn. M. Assn., 1908.

"Some Observations upon the Cystoscope and Ureteral Catheter."—Am. J. Dermat. and Genito-Urin. Dis., 1908.

"An Appendix Containing Fecal Concretion."—St. Paul M. J., 1909.

"A Case of Kidney Stone, with Abscess."—St. Paul M. J., 1909.

"Diverticula of the Sigmoid: Report of a Case."—J. Minn. M. Assn., 1910.

"An Aid to the Proper Repair of Recent Lacerations of the Perineum."—J. Minn. M. Assn., 1910.

"Operations for Uterine Prolapse Compared."—JOURNAL-LANCET, 1913.

"Some Observations upon Peritoneal Adhesions."—St. Paul M. J., 1916.

"The Early Diagnosis of Intussusception in Children under Three Years of Age."—JOURNAL-LANCET, 1916.

"The Baldwin Operation for Artificial Vagina."—Surg., Gynec. and Obst., 1918.

"Artificial Vagina Utilizing a Single Portion of Ileum."—Surg., Gynec. and Obst., 1918.

"Intussusception in Children."—JOURNAL-LANCET, 1921.

"A Comparison of the Medical Ethics of 50 Years Ago and Those of To-day. Some Offenses Which Transgress the Principles of Right Doing, but Are Not Emphasized in Our Code."—JOURNAL-LANCET, 1922.

"Case of Pregnancy without Corpus Luteum."—Minn. Med., 1922.

"Surgery in a Past Generation."—Minn. Med., 1922.

This closes the record of his literary and scientific works. Some of these were of masterly character. Such for example as his paper presented at the Western Surgical Association Meeting upon the "Early Diagnosis of Intussusception in Children Under Three Years of Age," read December 15, 1915, which attracted wide attention over the country and is considered a classic in clinical description.

#### PROFESSIONAL HONORS

He was a member of the American College of Surgeons, The Western Surgical Association, The Minnesota Academy of Medicine, The Minnesota Pathological Society, The State Medical Association, and the Hennepin County Medical Society. At the time of his death he held the honorary title of Emeritus Professor of Diseases of Women, University of Minnesota Medical School. He taught Anatomy in the St. Paul Medical College during its existence. When the Minnesota College Hospital Medical School was organized in 1881 he was one of its founders and its treasurer. With Drs. J. Clark Stewart,

and F. F. Wesbrook, he founded the Minnesota Pathological Society.

Among the many honors bestowed upon him were the presidency of the Minnesota Academy of Medicine, the presidency of The Western Surgical Association, the presidency of The Minnesota Pathological Society, the presidencies of the Minnesota State Medical Association and Hennepin County Medical Society.

At the time the different local medical schools were amalgamated under the State University he was made professor of Gynecology, which position he held for many years.

It is a great achievement to have lived a long, honorable, industrious, and useful life. This Amos Wilson Abbott has done and left an inspiring record behind him. He possessed a high sense of loyalty, not only to his friends and his patients, but also to his profession and the nation at large.

On some special occasions he was accustomed to wear in the lapel of his coat his Grand Army of the Republic button. You all know that he had served almost as a boy in the struggle between the States. I came into his office one morning and seeing the button in the lapel of his coat made some remark about it. "Yes," he said, turning up the lapel and looking fondly down at the button, "I value that as much as I value my life."

He had a high sense of professional honor. Many years ago one of the leading magazines of the country sent out a journalist to write up the prominent surgeons of the Middle West and Dr. Abbott's name was included in the list. One article covering the work of some of these clinicians had already appeared which Dr. Abbott had seen and considered nothing short of professional advertising. When this writer interviewed him he received him courteously and explained the scope and character of his professional work and then said, "Now, Sir, do you intend to publish this? If so, I request you not to do so. It is contrary to the ethics of my profession." His name was not included in the list of those medical men whom the periodical glowingly described.

While a man of few words and rather grave demeanor, Dr. Abbott had a high sense of humor. Even in the gray days of his last illness when he knew he was face to face with a mortal illness, he would cheer his medical attendants with some witty remark over a symptom, grave enough but about which he could see a humorous side.



His wisdom and influence in the councils of Abbott Hospital will be sadly missed. He was always so sane in his views, so free of personal animus, so charitable toward the faults and misconduct of his professional confrères, so much one of us, so human in all his relationships. His memory lives and will abide as an inspiration and a force for good in the work of the members of this staff. He created the atmosphere in which the future professional work of the Hospital must be carried on. The highest tribute which we can pay to his memory is to unite our efforts in whole-hearted support of the ideals for which he labored.

RESOLUTIONS ADOPTED BY THE MEDICAL SCHOOL  
OF THE UNIVERSITY OF MINNESOTA.

At its meeting on March 7, 1927, the Administrative Committee of the Medical School of the University of Minnesota, adopted the following Memorial to Dr. Amos Wilson Abbott, Emeritus Professor of Gynecology:

Doctor Amos Wilson Abbott has gone on, in the fullness of his years,—years of usefulness, honor, and distinction,—“to that bourne whence no traveler returns.” Fifty years of professional life witnessed no weakening of the grasp of his remarkable mind, no lessening of his capacity for continual growth, no failing of his perennial interest in his daily work.

He was ideally the doctor of his day,—the beloved physician. He was loved of his patients, his associates, his students, his friends. Invariably courteous, unchangingly loyal, emotionally reticent, naturally modest, quietly confident, keenly humorous,—everyone knew him for what he very simply was,—one of Nature’s gentlemen, content to walk straight and strong in his accustomed ways.

Of diagnostic insight, of clear pathologic judgment, of surgical skill, one trait distinguished him above all the sterling qualities that entered into his make-up,—*he was professionally honest*. He was pledged to scientific truth as he saw it, and he had the rare ability to see it clearly and to see it whole. He had a contempt for professional subterfuge and sham. He disliked camouflage. He distrusted the subtleties of medical opinion. He stood four-square to all the winds of theory that blew. With Minot he defined science as “that body of truth that has acquired impersonal validity.” Again and again, in his earlier years, he would sit out the discussion of conflicting professional views and at length rising slowly to his feet would say: “Gentlemen, how do you *know*?” And yet it was of the nature of the man himself to know and to help others to know; for he loved to teach.

One of the charter members of the faculty of the Medical School of the University of Minnesota, he bore a number of teaching titles and did honor to each in turn. He has held for years an emeritus professorship. He was slow of speech, but when he spoke men always heard him gladly. They knew him for a law-giver in his professional Israel.

His death is not a matter for regret. He has done a great, a noble work. His name is carved in the masonry of his beloved Hospital and there it will remain. His thoughts, his words, his deeds will live indefinitely in the spirit he has created and enlarged therein, in the memory of workers who have worked with him and whose work will continue to be inspired by his leadership, in the service of the divine ministry of suffering he has followed so long.

E. P. LYON, M.D.  
Dean of the Medical School

## PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

Meeting of January 12, 1927

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, January 12, 1927, at 8 P. M. Dinner was served at 7 P. M.

The meeting was called to order by the President, Dr. F. E. Burch. There were thirty-two members and one visitor present.

Dr. John F. Fulton read the following resolutions, written by Dr. Burch, upon the death of

Dr. William R. Murray, which occurred on December 27, 1926:

It is with sincerest regret and sorrow that I record for this Academy the death of one of our Fellows, Dr. William R. Murray.

Although a comparatively recent fellow of the Minnesota Academy of Medicine, William R. Murray was a valued and interested participant in its monthly gatherings. Retiring and reticent by nature, he nevertheless loved his professional associations; when he came to this Academy, he enjoyed

the social contacts as much as the scientific benefits which characterize our meetings. Silent by nature, he was a lovable companion and a man whom all esteemed.

Dr. Murray always remained true to his professional ideals, which were of the highest. He commanded the respect of his associates, especially of those who practiced in his own special field and of his colleagues at the University. Integrity, fairness in judgment of others, sincerity in his motives made us honor and admire him. As a consultant he was esteemed for his quiet, unobtrusive analysis of a problem; his advice was always sound, and tempered with conservative good judgment.

His tragic death marks one of the unfortunate accidents of surgery. His premature passing means a distinct loss to the profession and to this Academy. Therefore, be it

*Resolved;* that the Minnesota Academy of Medicine express to Mrs. Murray and her sons and daughter its appreciation of him as a colleague and Fellow of this Academy, our sincerest regret in the loss we share with them and our deepest sympathy in their hour of sorrow.

The scientific program of the evening consisted of two papers.

Prof. C. M. Jackson gave a talk, which was illustrated with numerous lantern-slides and charts, entitled "The Physique of Minnesota University Students—a Study in Constitutional Anatomy and Physiology."

#### DISCUSSION

DR. A. SCHWYZER (St. Paul): I rise to thank Prof. Jackson for the paper he has brought before us. He compared the Scandinavian and German average and this brought back to my mind an article I read about ten years ago in the *Swiss Medical Journal*, when the war was in full swing in Europe; an article by an anthropologist who tried to show that it was rather little reasonable to speak of a war of races against each other, and of the hatred of the races. He showed that in Europe anthropology can make out three different races: First, a Northern European race—the "Reiengräbermensch," that is, the type which was found in the North where the bodies were buried in rows. Only in two districts could this race be found preserved to-day in a more or less clear type, namely, in some southern parts of the Scandinavian peninsula and in some southwestern districts of England. They were outspokenly dolichocephalics, of a very tall build, long and heavy bones, light hair, and blue eyes. Then comes the middle European type or *typus Alpinus*, very stocky, strong bones like in the former type, but of less height. In this race the heads were broad, which formed the most characteristic feature. The third type was the *homo Mediterraneus*, with less height than the two others, considerably more slender bones, and again long skulls. This author came to the conclusion that we could not talk of a real anthropological difference of races to-day when considering the different western European peoples, because they are so mixed. When you consider,

for instance, that the Alemanni with strong heavy bones and dolichocephalic heads, which is the type of head of the northern European race, are the southernmost of the Germanic peoples, it becomes clear that the Germans as a whole are very mixed. The average German to-day is probably a mixture of the northern European type and the *typus Alpinus*. The Scandinavians, with the exception mentioned, are also mixed.

This coincides with what Prof. Jackson found in his studies, that there are very small anatomic differences between the two nationalities.

These studies are interesting. We have learned with interest to-night that the bodily well-developed fellows are usually correspondingly well-developed mentally.

Dr. R. E. Scammon gave a lantern-slide talk entitled "The Growth History of the Human Heart."

#### DISCUSSION

DR. F. W. SCHLUTZ (Minneapolis): We all probably have the same impression about the work presented by the last speaker and the one preceding him. I marvel at the accurate and splendid analysis to which the subject has been put by both Dr. Scammon and Dr. Jackson. I doubt whether many of us realized that an anatomical subject could be so usefully applied to the clinical field of medicine. With just a little reflection one can readily see how easily this type of research can lend itself to investigation in the clinical field both in normal and abnormal states. This is not only true of children but is equally true of the adult. I don't think that anatomical data have generally been treated this way before. We are fortunate in having this type of work going on at the University of Minnesota. Most of us, I believe, had the feeling that research in anatomy had definite limitations. Dr. Scammon and Dr. Jackson have presented things which open up an entirely new and almost unexplored field that seemingly offers exceptional opportunities for new research and establishes a mechanism by which many clinical phenomena can be accurately measured and more completely understood.

DR. FARR (Minneapolis): There was one point I wanted to ask Dr. Scammon. It occurred to me that the baby during the first month or so does not exercise very much, and I wondered what effect this had on the growth of the heart. Would that influence the slower growth at that time?

DR. SCAMMON: I do not think we have any direct evidence of that. The baby certainly exercises as much then as in utero and, as was shown in the charts, the upward turn of the curve comes just about the time that the body-weight catches up to the proportionate heart weight.

The President expressed the appreciation of the members of the Academy to Drs. Jackson and Scammon for presenting these very interesting studies.

CARL B. DRAKE, M.D.  
Secretary



# THE JOURNAL-LANCET

Represents the Medical Profession of  
 Minnesota, North Dakota, South Dakota and Montana  
 The Official Journal of the  
 North Dakota and South Dakota State Medical Associations  
 The Hennepin County Medical Society  
 The Soo Railway Surgical Association  
 and The Sioux Valley Medical Association

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APRIL 1, 1927

## THE AMERICAN MEDICAL ASSOCIATION IN MINNEAPOLIS 1928

Minnesota is looking forward to entertaining the American Medical Association in 1928, if we can get the proper co-operation. The meeting is scheduled for Minneapolis and is one in which the new municipal auditorium will play an important part. This building will take care of a very large crowd, and if the meeting-rooms are not sufficiently numerous, rooms in adjacent buildings within a block or a block and a half can care for some of the Sections. Minneapolis alone does not profit by this convention, but St. Paul is equally interested and has very kindly and courteously offered any assistance they can give, and the Ramsey County Medical Society has already passed a resolution saying they will stand behind the convention if we can get it for Minneapolis.

Then, too, it is hoped we shall be able to attract many visitors to Minnesota who will see its numerous and outstanding lakes and who will enjoy the fishing and the sporting events generally that many of the ten thousand lakes provide. It will also give the Easterners an opportunity to see something of the Middle West and to appreciate the beauties of Minnesota and its adjoining states. Of course Minneapolis and St. Paul will offer their golf courses for the men who

are fond of the game, so that every one can be provided with a special form of amusement.

In order to carry over this plan it is necessary to have the united support of the delegates of the states of Minnesota, Wisconsin, North and South Dakota, and, in fact, of all the states as far as the Pacific Coast. And THE JOURNAL-LANCET expressly wishes that the secretaries of the various local societies would communicate with their delegates or send in a list of their delegates so that they can get in touch with the convention committee. We have already on hand a partial list of the delegates over the United States, but the list is not complete and will not be completed until later. Then the committee would like to ask that if any man in any of the states knows some delegate in the Eastern states or the Western states, or whatever part of the country he is familiar with, he will communicate with him and request his friend either to see the state delegates and inform them that it is the purpose of the committee to entertain the American Medical Association.

The hotel facilities here are sufficiently large to accommodate a normal attendance, say of five thousand visitors, to the American Medical Association, and St. Paul is joined by quick carlines or bus service so that those who care to spend the time in St. Paul will find ample and satisfactory hotel accommodations that will provide for nearly an equal number.

The question of the meeting place will be determined entirely by the House of Delegates and for that reason we ask your hearty support and your influence in seeing that some distant friend is notified of the fact that Minnesota will put up a strong argument for the meeting of 1928.

Then, too, attention must be called to the fact that a large delegation from Minnesota and adjoining states should be in attendance at Washington in order to see the delegates in person, and the arguments can be used as outlined above, together with the fact that the Mayo Foundation and Clinic will be a great attraction, that the city of Rochester is very near the Twin Cities and will give many of the members of the American Medical Association, as well as delegates, opportunity to see the working of this tremendous aggregation of doctors and the enormous amount of clinical material they are able to present. Then, too, by that time (the summer of 1928) the Mayo Foundation will have completed its new building, costing approximately \$1,500,000.

Of the auditorium you will hear something later. The Civic and Commerce Association are

preparing a small but beautiful booklet with views of all kinds which should carry conviction that the building and its adjacent halls will be ample to take care of all the men who come here for the meeting.

### THE NORTHWESTERN CONFERENCE ON CHILD HEALTH AND PARENT EDUCATION\*

On March 8th, 9th, and 10th, a notable event occurred in Minneapolis. A Conference was held here the like of which had not been hitherto seen in the Northwest. Gatherings of similar character, under similar caption, had been held, but only within eighteen months past, in New York, Chicago, Los Angeles, and very recently in Kansas City.

The Conference was, primarily, a call to parents in the interest of their own children. It was recognition of the fact that normal child development demands child study; that child-rearing presents to-day complex problems which must be solved initially in the home, and the only solvent of which is found in the education of the parent.

While this conception is newly born in this new child day, the fact that it is not prematurely born, that parents are indeed conscious of their need of help and anxious to get it, is proven by the remarkable response to the call of the Conference.

Approximately 2,000 persons, aggregating over 7,000 individual attendants, were admitted to its general sessions; an average of over 400 attended its daily luncheon round tables; some 238 persons were present at the official banquet.

A veteran in child study and one of the earliest advocates of parent education, who took part in the program, volunteered his judgment that while in point of number the Conference had been exceeded in the greatly larger cities referred to, yet in the subject matter of its program, in the general quality of its speakers, and in the keen social consciousness of its audience it surpassed them all.

In the outcome of the Conference, room may be found for regret at just two points. Mothers, teachers, public-health and social workers were keenly alive to the educational opportunity it

offered. They were eager for all they could get out of it from start to finish. From the first address, through three full days, to the last item on the program, their large attendance, and interest were remarkably sustained.

But fathers, sadly enough, and physicians, strangely enough, were alike conspicuous by their absence. Fathers, in any considerable number, have not yet awakened to their personal responsibility for the essential betterment of their children. The doctors, save for the remarkably competent group of pediatricists with whom the Twin Cities are blessed, are seemingly slow to grasp the significance of this new health movement, with all the implications it carries with it. They appear reluctant to assume the responsibility for popular leadership in this venture; they are lacking in any real awareness of their own professional interest in this field.

The initiators of the Conference, among whom Mr. Willis K. Nash, a public-spirited business man of Minneapolis, deserves special distinction, the many organizations that sponsored it, the guarantors who lent it their financial backing, and executives of the public-health agencies who gave it their heartiest support, are all entitled to the gratitude of the many mothers, teachers, and social workers who profited by its unique occasion.

### MEDICAL MATTERS IN NORTH DA- KOTA LEGISLATURE

The North Dakota State Legislature this year has been fairly circumspect in the handling of its medical legislation. A bill admitting Chiropractors to hold office on the regular staff of our free hospitals was indefinitely postponed. Several other measures affecting public safety in the matter of medical standards were treated judiciously.

Appropriations were made for the State Tuberculosis Sanatorium at San Haven, granting almost \$200,000 of new buildings during the present biennium. This includes completion of the Children's Pavilion and a central Infirmary providing for sixty-five patients, a flat of offices, a laboratory room, and an x-ray department.

The School for the Deaf secured a new dormitory, as did also the State Hospital for the Insane at Jamestown.

The State Health Department, though not given all of its requests, was allowed an increased appropriation. Throughout North Dakota a very important part of State health work has been neglected heretofore, on account of appro-

\*This editorial was written by Dr. Richard Olding Beard at the request of the Editor of The Journal-Lancet. Dr. Beard was the Executive Secretary of the Conference, and brought to the work his splendid executive ability, his profound knowledge of infant and child welfare and education, and his wide acquaintance with the public health and welfare workers of the country. In short, too much credit cannot be given him for the success of this splendid movement which is destined to assist in the solution of the problems of child welfare now before the public.—The Editor.



priation, namely, sanitary engineering. This wing of the Public Health Department has again been insufficiently provided for this year.

The State Tuberculosis Association is carried on through the Christmas Seal Sale, no aid being requested from State funds. Last year the seals yielded something over \$20,000, returns not being all received from the counties at this time.

It would seem that in time our legislatures may discriminate more justly as to which are legitimate State enterprises and may use more of the public funds for health purposes—funds which in the past have been too freely submerged in costly industrial experimentation.—J. C. L.

### THE CHILDREN'S HOSPITAL OF ST. PAUL

Somewhat inadvertently and carelessly, in a news item in our last issue, we referred to the early erection of a building for "Dr. Walter R. Ramsey's Children's Hospital."

Dr. Ramsey has a larger vision of the work. "The Children's Hospital," of St. Paul, is planning to do a work far greater than any private hospital is doing or can do. True, it is a work for the care and the cure of the individual child, but beyond this is the study and the research work that lead to a larger knowledge of children's diseases by the medical profession.

While Dr. Ramsey is the Medical Director of this "specialized hospital, devoted wholly to the needs of infants and children," we hope the whole medical profession will become interested in the work, share in it, and profit by it.

It is planned to raise an endowment fund for this hospital large enough to support the work without depending upon precarious annual donations from the public.

### MISCELLANY

#### HEALTH-TEST EXAMINATIONS ARE EXTENDING

The University of Minnesota boys and girls who go into student activities, such as publications, dramatics, class offices and the like, may be put in the same class with athletes if a new proposal to require them to take a physical examination is adopted.

The proposal is based on the fact that students who engage in special activities are under a special strain upon their nervous systems and general physical structure and should be sure they are well enough to take on this added burden. All who go out for athletics must be examined under an existing rule.

Dr. Harold S. Diehl, director of the student health

service, and Vernon M. Williams, assistant dean of men, have both gone on record in favor of the new ruling. It has also come before the All-University Student Council, which expressed approval of the idea, but suggested that it was probably too late to put into effect this year.

Students who are most active and alert are often the ones who go into activities, it has been found, and they are required to maintain at least a "C" average in class work if they are to continue an official connection with any special student organization. This makes it necessary for them to pay careful attention to both studies and activities.

Professor F. S. Chapin of the Department of Sociology, who recently made a study of student activities at the request of President Coffman, also appeared before the Student Council and advocated physical tests for students seeking offices and managementships. If the plan is adopted it probably will apply at first only to student offices of major importance. It may later be extended to include others.

### BOOK NOTICES

#### NURSERY GUIDE FOR MOTHERS' AND CHILDREN'S NURSES.

By Louis W. Sauer, Ph.D., M.D., Senior Attending Pediatrician, Evanston Hospital. St. Louis; C. V. Mosby Company. 1926.

This book is a good nursery guide for the intelligent mother.  
—DAVID M. SIPERSTEIN, M.D.

GENERAL INDEX VOLUME OF THE COLLECTED PAPERS OF THE MAYO CLINIC AND THE MAYO FOUNDATION—1884 to 1925 inclusive. Octavo volume of 227 pages. Philadelphia and London: W. B. Saunders Company, 1926. Cloth, \$5.00 net.

This General Index covers all volumes of articles published from the Mayo Clinic through 1924, and volumes 1 and 2 from the Mayo Foundation and Medical School of the University of Minnesota. The volume should be of value to those whose libraries include a number of volumes of the Collected Papers. It should also be of value to medical and general libraries.

—THEODORE H. SWEETSER, M.D.

THE MEDICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every month). Volume X, Number 2, Philadelphia Number, September, 1926. Octavo of 217 pages, per clinic year (July, 1926, to May, 1927), paper, \$12.00; cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company.

This volume includes further papers from Philadelphia, all of which are very interesting. Of particular interest is an article by Dr. Martin E. Rehfuß, in which he discusses "Diagnostic Duodenal Pathology." He brings out the fact that clinicians are apt to concentrate on gastric pathology to the exclusion of underlying duodenal pathology and that there are many forms of duodenal pathology which may present a similar picture to stenosing duodenal ulcer. A perfectly normal gastric contour and a perfectly uniform duodenal bulb do not exclude the probability of a lesion beyond that point. The finding of a large resid-

um which is heavily bile-tinged is suspicious of a lesion of an obstructive nature beyond the pylorus. A close study of the duodenum will often explain many obscure gastric cases.

Doctor Kleen and Keeler report some good results in chronic arthritis with the use of Coley's fluid. The foreign protean treatment is very common but they believe Coley's fluid is better because of its high-powered potency.

Dr. John H. Stokes presents an excellent paper on skin, particularly on (1) "Differential diagnosis of psoriasis and syphilis"; (2) Lupus vulgaris; (3) Disseminate Erythematous Lupus and (4) the problem of malignancy in the presence of syphilis.

Other papers of equal importance make the volume well worth reading.

—A. E. CARDLE M.D.

**PEDIATRICS.** By various authors. Edited by Isaac A. Abt, Professor of Diseases of Children, Northwestern University Medical School, Chicago. Volume VIII and Index Volume. Cloth, Price \$10. Index volume gratis. Pp. 1102 with 388 illustrations. Philadelphia: W. B. Saunders Company, 1926.

This volume contains a very excellent discussion of the diseases of the skin during infancy and childhood. There is no one field in pediatrics which is so neglected by the average pediatrician and about which he can learn more. Dr. Ormsby and his collaborators have written a most thorough work on skin infections in children in pediatric literature. It is by far the most practical and useful section in this volume.

Dr. Geo. E. Shambaugh and Dr. Casey A. Wood have written the sections concerning ear and eye diseases, respectively. Both chapters are worthy of study and bring our knowledge of these subjects up to date.

Other sections on the structure of hospitals and medicolegal phases of pediatrics are of more technical interest to the administrator.

There is a good section on tumors of infancy and childhood by Dr. Oscar T. Schulz and on encephalitis by Dr. Leslie B. Hohman.

This volume ends with a discussion of animal parasites. Classification and treatment are clearly described. This chapter should also be of great practical importance to the pediatrician.

The entire volume forms a fitting close to the most complete and exhaustive compilation of pediatric knowledge in the English language at the present time.

An index volume of 250 pages makes references to any topic a relatively easy matter.

—DAVID M. SIPERSTEIN, M.D.

**OBJECTIVE PSYCHOPATHOLOGY.** By G. V. Hamilton, M.D. St. Louis: C. V. Mosby Company, 1925. Pages 354. Price, \$5.00.

"This book," to quote the first paragraph of the author's preface, "is essentially a psychopathologist's account of his studies and interpretations of various modes of human and animal behavior. It is meant to reflect the importance of effecting such studies by the use of scientifically formulated methods of research as an essential supplement to the always useful but never quite trustworthy methods of field and clinical observation."

The author reviews a series of two hundred examinations in this field and gives his summary survey findings.

In Part II of this book he discusses foundations of psychopathology, neural morphology, and neural physiology. He then discusses his observations on animal reactions to baffling disadvantages. Furthermore, the principles of habit formation, the relation of inhibition of responsiveness to indirect responsiveness, unsatisfied major cravings, reactions to inferiority and sex behavior are treated in separate chapters.

The science of psychopathology has proved to be a hazardous subject to treat in text-books. The reviewer can recall several that met with early doom and that for good cause. He feels, however, that this book represents a good deal of work, and will be of great value to those particularly interested in problems of psychopathology.

—J. C. MICHAEL, M.D.

## NEWS ITEMS

### NOTICE

The Minnesota Society of Internal Medicine offers \$250 cash for the best thesis received before January 1, 1928, on a subject of research in clinical medicine. The prize is open to "any practicing physician in the State of Minnesota exclusive of members of this Society." Information may be obtained by writing to the Secretary, E. L. Gardner, M.D., 610 Yeates Building, Minneapolis, Minn.

Dr. V. H. Moats has moved from Maxbass, N. D., to Wolford, N. D.

Dr. V. W. Embrie has moved from Yankton, S. D., to Beresford, S. D.

Dr. T. Oftedal of Conde, S. D., is doing post-graduate work in New Orleans.

Dr. A. C. Biddle, of Lewistown, Mont., has sold his practice and will locate in Ohio.

Dr. D. M. Clark, a recent graduate of the Medical School of the U. of M., has located at Pine City.

Dr. H. B. Noble, of Howard, S. D., celebrated the forty-fifth anniversary of his practice in that village last month.

Dr. Daniel H. Bessessen, of Minneapolis, was married last month to Miss Swanhild C. Arnesen, also of Minneapolis.

The County and City Health Officers' Association of South Dakota will hold its annual meeting in Huron on May 2.



Dr. H. A. Daniels, of the Moore Hospital, of Eveleth, has gone to the Mayo Clinic to specialize in internal medicine.

There were seven applicants for the position of county jail physician at Duluth last month. Dr. C. M. Smith was chosen.

The Dell Rapids Hospital of South Dakota paid a dividend of 3½ per cent last year. A hospital is as good as a savings bank!

Dr. A. A. Law, of Minneapolis, presented a paper at a meeting of the Sioux Falls (S. D.) District Medical Society last month.

In the year 1927 the number of mothers who attended the free clinics given by the Infant Welfare Society of Minneapolis was 14,510.

Nurses taking a course in the training school of the Red Wing Hospital will hereafter take their third years' work at the Ancker Hospital of St. Paul.

The United States Veterans' Hospital, No. 106, at Fort Snelling, will be formally dedicated on April 9, with distinguished speakers on the program.

The first week in May (May 1-7) has been designated as "Child Welfare Week" by the governor of North Dakota, and May 1 as "Child Health Day."

Dr. E. L. Tuohy, of Duluth, spoke last month before the Ramsey County (St. Paul) Medical Society on "How to Study Medicine Effectively from 20 to 65."

A short course in nursing will be given at the University of Minnesota Farm School on Wednesday afternoons of May 6, 13, 20, 27, and June 4, 11, and 18.

The new Wittenberg Hospital at Williston, N. D., to cost about \$60,000 and sponsored by all Protestant denominations of that city, is assured, and work on its building will begin soon.

Dr. C. S. Lobel, assistant surgeon at the National Sanatorium at Battle Mountain, S. D., has resigned his position and accepted a position on the staff of the Dayton, Ohio, State Hospital.

The Minnesota Eugenics Society met in Minneapolis last month, when the following officers were elected: President, Dr. C. F. Dight; treasurer, Dr. George G. Eitel; secretary, Dr. Walter E. List, all of Minneapolis.

An appropriation of \$300 has been made by the A. M. A. to assist Dr. G. A. Talbert, of the Department of Physiology in the Medical School

of North Dakota, in his research work on the constituents common to the sweat, urine, and blood.

Dr. Wallace H. Cole, of St. Paul, Assistant Professor of Orthopedics at the University of Minnesota and Chief Surgeon to the Twin City Shriners' Hospital, gave an orthopedic clinic at a special meeting of the Cass County Medical Society at Fargo, N. D., last week.

Dr. Walter J. Marcley, of Minneapolis, has been appointed Chief of the Tuberculosis Service at the new Veterans' Hospital at Fort Snelling. Dr. Marcley will maintain his office in the P. & S. Building and care for his private practice, which is mainly consultation work.

Dr. F. O. Woodward, president of the Stutsman County Medical Society of North Dakota, spoke on "Contagious Diseases" before the Central Parent and Teachers' Association at Jamestown last month. Dr. Maysil Williams of the State Board of Health also spoke at the meeting.

At the meeting of the Watertown District Medical Society of South Dakota, held at Watertown last month, papers were presented by Dr. M. J. Hammond on "Acute Abdominal Pain" and by Dr. Finn Koren on "Respiration." The Society voted to ask the State Association to meet in Watertown in 1928.

The Northwest Conference on Child Health and Parent Education, held in Minneapolis last month, was a greater success than the most sanguine had predicted for it. It was a great success, great in the interest of the public, the size of the attendance at all meetings, and in the high quality of the addresses. We make editorial comment on the Conference on another page.

Monographs on the Child Health Demonstrations conducted at four stations in this country, of which Fargo, N. D., is one, will soon be ready for distribution and will be sent free to those who ask for them. These monographs will be published in 1927 and '28. They can be obtained by addressing the Child Health Demonstration Committee, 370 Seventh Avenue, New York City.

Dr. W. P. Larson, of the University of Minnesota Medical School, recently read a paper before the noon-day meeting of the Hennepin County Medical Society reviewing the more recent work relative to immunization against diphtheria and scarlet fever, and with special reference to the work carried on under Dr. Larson's direction at the University of Minnesota, the

so-called soap toxin. Some preliminary reports, especially of the combined diphtheria and scarlet fever soap toxin immunization, particularly the work done in Minneapolis and some of the smaller communities in Minnesota, and also in Cleveland, Ohio, were given. The statistics for Minneapolis are most promising, and out of approximately 14,000 partially immunized, or immunized cases by this method there was one case of scarlet fever in 1,550, whereas the proportion of scarlet fever for the same age group of those not immunized by this method is one in 83. And out of this group of 14,000 one case of diphtheria developed.

#### The Stutsman County (N. D.) Medical Society

The last meeting of the Stutsman County Medical Society was held on March 25, 1927, at Trinity Hospital. A dinner was served at 6:30 p. m. and was followed by the meeting.

Dr. Wallace Cole, of St. Paul, presented several orthopedic cases and spoke at length on "The Diagnosis and Treatment of Congenital Dislocation of the Hip."

Dr. H. P. Long of Fargo then read a paper on "Clinical Heart Irregularities and Incidents of Amebiasis and Other Parasitic Infections of the Bowels in North Dakota."

Dr. Joseph Sorkness' application for membership in the Society was accepted.

Dr. A. A. J. Lang's demit from the Sheyenne Valley Medical Society was accepted.

The Committee on Memorial Resolutions presented the following:

"We, the Committee on Memorial Resolutions, wish to present the following resolution:

WHEREAS the Supreme Ruler of the Universe in His infinite wisdom has seen fit to remove from our midst Dr. A. H. Movius, an esteemed member of the Stutsman County Medical Society,

THEREFORE BE IT RESOLVED, by the members of the Stutsman County Medical Society, That we deeply regret the passing of a beloved fellow practitioner, because of his contribution for the betterment of his profession in our community in which he lived, and the unselfish service rendered to his brother practitioners, to his patients, and to the Trinity Hospital in Jamestown, North Dakota.

BE IT ALSO RESOLVED, That we offer to his family and their friends our most profound and heartfelt sympathy, and that copies of this resolution be sent to the family of the deceased member and spread upon the minutes of the Stutsman County Medical Society.

Signed, A. W. GUEST, M.D.  
T. L. DUPUY, M.D.

There were twenty-seven present at the meeting.

The next meeting will be held in the latter part of May.

H. M. BERG, M.D.  
Secretary

#### Hennepin County Medical Society

Wednesday noonday meetings are held in the Library rooms of the Donaldson Building, 7th St. and Nicollet Ave. (Luncheon at 12:30).

Noonday Meetings for April, 1927:

April 6—

Medical Reports and Testimony—Dr. Emil S. Geist  
The Lawyer, the Doctor and the Compensation Law—Mr. Leavitt R. Barker, Attorney

April 13—

The Estimation of Disability as Determined under the Compensation Laws—  
Dr. George R. Dunn  
The Insurance Adjustor's Attitude Regarding Compensation Cases, with Special Reference to Facts which Directly Concern the Medical Profession—  
Mr. S. L. McGowan, Mgr.

Claim Dept., Ocean Accident Corp., Ltd.

April 20—

The Medical Aspects of Public Liability Cases (automobile accidents, etc.)—  
Dr. J. Frank Corbett  
The Insurance Adjustor's Attitude Regarding Public Liability Cases (automobile accidents, etc.) with Special Reference to Facts which Directly Concern the Medical Profession—Mr. George H. Moloney  
Chicago, Ill.

April 27. (Tentative Titles)—

The Doctor, the Insurance Company and the Fees—Dr. Kenneth Bulkley  
Accident, Disease, and Compensation—  
Dr. Donald McCarthy  
ERLING W. HANSEN, M.D.  
Secretary

#### Minneapolis Surgical Society

The regular monthly meeting of the Minneapolis Surgical Society will be held at 8:00 p. m. on Thursday, April 7th, in the Library of the Hennepin County Medical Society, Donaldson Bldg., Minneapolis.

The following program will be presented:

1. Stones in the Bile-Ducts, with Reports of a Strange Case—Dr. J. Frank Corbett
2. Demonstration of Empyema Cases: Methods of Treatment—Dr. J. M. Hayes
3. Acute Suppurative Appendicitis, with Some Factors in Mortality—Dr. Ivar Sivertsen  
I. H. SWEETSER, M.D.  
Secretary

#### Kingsbury County Medical Society of South Dakota

The Kingsbury County Medical Society held its regular meeting in Arlington, S. D., Thursday, March 17, 1927. The members of the society and their ladies were the guests of Drs. E. H. Grove and N. K. Hopkins at a very fine St. Patrick's Day Dinner at 6 o'clock. After dinner was served the members retired and held their business meeting, Dr. E. H. Grove, President, presiding.

The Society elected its officers for the current year as follows: President, Dr. Carl A. Feige, Iroquois; vice-president, Dr. H. B. Rae, Lake Preston; delegate, Dr. E. H. Grove, Arlington; secretary-treasurer, Dr. C. P. Stockdale, Erwin. After the election of officers a round table discussion was held, in



which Dr. A. E. Bostrom, De Smet, State representative from this district gave a very lengthy and interesting discussion of the proceedings of the last session of the Legislature held at Pierre.

The next regular meeting will be held in Iroquois, in June, at which time the Society will be the guests of Drs. Feige and Dickey along with their ladies.

C. P. STOCKDALE, M.D.

Sec'y-Treas.

#### Dr. Allan K. Krause of Johns Hopkins



The Schedule of addresses to be delivered next week in the Twin Cities by Dr. Allan K. Krause, of Johns Hopkins, was published in our last issue (p. 142). The Hennepin County Medical Society has sent a special notice to its members concerning the address and banquet for Monday evening, April 4, at the Nicollet House.

The opportunity to hear Dr. Krause is a rare one, and the man who misses it misses an opportunity to hear an exceedingly able man present in a masterful way

a subject upon which he speaks with authority.

#### Physician Wants Location

An experienced physician wants to locate in a farming country; Catholic community preferred. Address 338, care of this office.

#### Apparatus for Sale

Diatherm Wappler Excell Model; new with a very complete line of accessories. Substantial discount. Cash or terms. Address 335, care of this office.

#### Practice for Sale

An unopposed \$4,000 annual practice in North Dakota is offered for sale for \$100, which will include office furniture. Am specializing. Address 334, care of this office.

#### A Good Opening

For an eye, ear, nose, and throat man, also a children's specialist in a city of 25,000. In good farming community not far from the Twin Cities. Address 330, care of this office.

#### Minneapolis Office Furniture and Lease for Sale

I am leaving the city. Office furniture and lease for sale very cheap. Good opening in fine part of city for a young man. Address 337, care of this office.

#### Technician Wants Position in Community Hospital

Graduate technician, with three years experience and with two years nurse's training. Willing to assist with the nursing when not busy in laboratory. Best of references. Address 336, care of this office.

#### Physician Wanted

Territory good. Collections good. Practice established. May take over drug-store if desired. Applicant will please give full particulars about himself in first letter. Address Greden & Speltz, Altura, Minn.

#### Practice for Sale

In North Central Minnesota. Town of 800 in dairy community. Possession given immediately. Price, \$400. Equipment, office furniture, and X-ray. Modern office, steam heat, and city water. Specializing. Address 339, care of this office.

#### Office Space Offered in Minneapolis

A very desirable office with a firm of established dentists is offered to a physician at low rental. School within one block of office with 2,000 children. Overhead expense small. A Catholic preferred. Address Dentist, 3800 Grand Ave., Minneapolis.

#### Physician Wanted

Eye, Ear, Nose, and Throat. To become associated with a group of physicians in Minneapolis. New clinical building. X-ray and clinical laboratories. Free office expense until established. Also wanted, an associate in General Practice and Surgery on salary. Address 329, care of this office.

#### Physician Wants Good Location

A recent graduate of the Medical School of the U. of M. who has had one year's interne work in a large private hospital and one year in a large public hospital wants to locate in a live town in the Northwest. Understand the Scandinavian and German languages well enough to carry on his work in these languages. Address 341, care of this office.

#### Large Minnesota Practice for Sale

Large obstetrical and general practice in city of 4,000, eighteen miles from Minneapolis. Will introduce and give to my successor a good business from the start. Established eight years. Collections \$60,000.00. Home and office built four years ago, perfectly modern and up to date. Ideal for a doctor. Best location in city. This is a high-grade proposition, and I want to hear from a live man at once. Reason for selling, specializing. Address 332, care of this office.

### MINNESOTA STATE BOARD OF MEDICAL EXAMINERS PHYSICIANS LICENSED AT THE JANUARY (1927) EXAMINATION TO PRACTICE IN MINNESOTA

Name	School and Date of Graduation	Address
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BY EXAMINATION

Bailey, Richard Jesse.....	U. of Minn., M.B., 1926.....	Miller Hosp., St. Paul
Barry, Gerald Williams.....	St. Louis U. Mo., M.D., 1926.....	St. Jos. Hosp., Kansas City, Mo.
Brown, Henry Russell.....	U. of Minn., M.B., 1926.....	Miller Hosp. St. Paul
Boies, Lawrence Randall.....	Columbia, M.D., 1926.....	New Asbury Hosp. Mpls.
Campbell, Orwood Jackson.....	Rush, M.D., 1923.....	Univ. Hosp. Mpls.

## PHYSICIANS LICENSED—Continued

Ehrlich, Sol Paul	U. of Minn., M.B., 1926	Gen. Hosp. Mpls.
Exner, Frederick Blythe	U. of Minn., M.B., 1926	Gen. Hosp. Mpls.
Fox, Ben	Wash. Univ. Mo., M.D., 1925	Mayo Clinic, Rochester
Gardner, Walter Peter	U. of Minn., M.B., 1926	481 Iglehart, St. Paul
Gibbons, Francis C.	U. of Minn., M.B., 1926	Gen. Hosp. Mpls.
Grimes, Marian	U. of Minn., M.B., 1926	Gen. Hosp. Mpls.
Guilbert, Gerald Didra	U. of Minn., M.B., 1926	St. Mary's Hosp. Duluth
Hazeltine, Matthew Emery	Stanford, M.D., 1925	Mayo Clinic, Rochester
Johnson, Eugene Ferdinand	U. of Minn., M.B., 1926	Gen. Hosp. Mpls.
Kasper, Eugene Mitchell	U. of Minn., M.B., 1926	Gen. Hosp. Mpls.
Kellum, Eugene LeRoy	U. of Pa., M.D., 1924	904 W. Center, Rochester
Koop, Herman Early	U. of Minn., M.B., 1926	506½ E. 4th St., Duluth
Koop, Severin Herman	U. of Minn., M.B., 1926	St. Mary's Hosp. Duluth
Kumpf, Albert Ernest	U. of Minn., M.B., 1926	Univ. Hosp. Mpls.
Larson, Lawrence Myrlyn	U. of Minn., M.B., 1926	2610 Polk St. N.E., Mpls.
Leonard, Gilbert John	U. of Minn., M.D., 1926	351 Ramsey, St. Paul
Maeder, Edward Charles	U. of Minn., M.B., 1926	512 Delaware St. S.E., Mpls.
Malerich, J. Anthony	U. of Minn., M.B., 1926	St. Mary's Hosp. Duluth
Moriarty, Margaret Berenice	U. of Minn., M.B., 1926	Univ. Hosp. Mpls.
Northey, Thornton McKee	U. of Minn., M.B., 1926	N. W. Hosp. Mpls.
Page, Raymond Lester	U. of Minn., M.B., 1926	Swedish Hosp. Mpls.
Peterson, Carl Melancton	U. of Minn., M.B., 1926	St. Mary's Hosp. Duluth
Richman, Samuel S.	U. of Minn., M.B., 1926	Gen. Hosp. Mpls.
Ripple, Rudolph Joseph	U. of Minn., M.B., 1926	Miller Hosp. St. Paul
Rohrer, Christian Albert	U. of Minn., M.B., 1926	4001 39th Ave. So., Mpls.
Rollie, Carl Olaf	U. of Minn., M.B., 1926	Mc Clusky, N. Dak.
St. Cyr, Kenneth J.	U. of Minn., M.B., 1926	Robbinsdale, Minn.
Saint, James Harold	Durham, M.B., 1924	Mayo Clinic, Rochester
Samson, Emmett Robert	U. of Minn., M.B., 1926	1919 2d Ave. So., Mpls.
Scherer, Roland Gustav	U. of Minn., M.B., 1926	Swedish Hosp. Mpls.
Sherrill, Walter Paul	Cornell, M.D., 1925	Mayo Clinic, Rochester
Smith, Leonard Marshall	N. W., M.D., 1926	Mayo Clinic, Rochester
Smith, Wm. Marshall	N. W., M.D., 1926	Mayo Clinic, Rochester
Stelter, Lloyd Albert	U. of Minn., M.B., 1926	3909 Aldrich Ave. S., Mpls.
Stryker, Wm. Byrd	U. of Minn., M.B., 1926	U. of Minn. Med. School
Thabes, John Alois, Jr.	U. of Minn., M.B., 1926	Brainerd, Minn.
Thompson, Gershom Jos.	Wash. Univ., Mo., M.D., 1925	Mayo Clinic, Rochester
Tinkess, Donald Ewing	McGill, M.D., 1925	Mayo Clinic, Rochester
Watson, Sidney James	U. of Minn., M.B., 1926	General Hospital, Minneapolis
Winther, Nora M. C.	U. of Minn., M.B., 1926	University Hospital, Minneapolis

## BY RECIPROCITY

Binger, Melvin Wm.	U. of Neb., M.D., 1926	Mayo Clinic, Rochester
Brunsting, Louis Albert	U. of Mich., M.D., 1924	Mayo Clinic, Rochester
Brown, Clarence Baxter	Rush, M.D., 1925	Mayo Clinic, Rochester
Eubanks, Geo. Foster, Jr.	Emory, M.D., 1925	Mayo Clinic, Rochester
Fleishman, Max	U. of Neb., M.D., 1924	Worthington, Minn.
Good, Louis Porter	Johns Hopkins, M.D., 1924	Mayo Clinic, Rochester
Good, Ralph Wm.	U. of Cin. Coll. Med., M.D., 1924	Mayo Clinic, Rochester
Humiston, Homer Wheeler	Harvard, M.D., 1925	849 1st St. S. W., Rochester
Kolars, James Joseph	Creighton, M.D., 1926	St. Mary's Hospital, Minneapolis
Light, Samuel Emlin	U. of Neb., M.D., 1925	N. P. B. A. Hospital, St. Paul, Minn.
Martinson, Carl Jerome	Col. Med., Evang. Cal., M.D., 1925	Wayzata, Minn.
Mayne, Roy Malone	U. of Ia., M.D., 1921	Fidelity Bldg., Duluth
Metheny, David	Jefferson, M.D., 1923	Rochester, Minn.
Miksch, Henry Fred	U. of Pa., M.D., 1923	1829 5th Ave. So., Minneapolis
Miller, Chas. Duane	Ohio State U., M.D., 1921	Mayo Clinic, Rochester
Norton, Donald Martin	Marquette, M.D., 1926	Mayo Clinic, Rochester
Norton, Manville Wm.	U. of Mich., M.D., 1924	Mayo Clinic, Rochester
Perry, Clarence Larimore	Ohio State Univ., M.D., 1924	Mayo Clinic, Rochester
Rosenberg, Geo. Clifford	Loyola, M.D., 1926	2728 Humboldt Ave., So. Minneapolis
Slattery, Peter A.	Creighton, M.D., 1908	Mound, Minn.
Thomas, Lester Chalmers	N. W., M.D., 1926	810 1st St. S. W., Rochester
Wright, Wm. Cale	U. of Mich., M.D., 1924	Mayo Clinic, Rochester



# THE JOURNAL- LANCET

Represents the Medical Profession of  
Minnesota, North Dakota, South Dakota, and Montana

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## MODERN ASPECTS OF THE DIAGNOSIS AND TREATMENT OF TUBERCULOSIS—PART II—Continued

By J. ARTHUR MYERS, Ph.D., M.D.

MINNEAPOLIS, MINNESOTA

### MODES OF ONSET

The most common modes of onset in tuberculosis are the following: *insidious*, *catarrhal*, *febrile*, *pleuritic*, and *hemorrhagic*. Perhaps the most dangerous mode of onset is the *insidious*. The disease creeps in like a thief in the night, and not infrequently is extensive and overwhelming before the patient is aware that his health has been seriously impaired. Such patients have very gradual development of symptoms such as slight loss of strength, malaise, slight loss of weight, slight cough, etc. Indeed the symptoms are so slight and increase so slowly that although the patient feels somewhat below par he procrastinates, thinking each day that tomorrow he will feel better until finally the disease has become so extensive and the toxemia so marked, resulting in symptoms so outstanding, that he is convinced of the necessity of an examination.

The *catarrhal* mode of onset is likewise dangerous because the patient frequently believes that he is suffering only from repeated colds or bronchitis. Hence the irritation attributed to colds, but in reality due to tuberculosis, often is treated lightly until the disease is well advanced.

The *febrile* mode of onset may appear as gradually increasing fever, or it may first be noticed when a high fever is present. The fever may persist over a long period of time or it may soon disappear only to reappear for short periods with

afebrile intervals. With this mode of onset the fever may be the only evident symptom of the disease.

The *pleuritic* mode of onset should always be safe from the standpoint of the patient. With this mode the patient may appear to be in excellent health when without warning a severe pleurisy appears. In many cases the pain is excruciating. When it has subsided one frequently finds that the visceral and parietal layers of the pleura are separated by effusion. Although the patient should be easily convinced that a serious condition threatens, many such attacks are allowed to go unheeded until a gross pulmonary lesion manifests itself.

The *hemorrhagic* mode of onset is perhaps the safest mode from the standpoint of the patient since there is no incident in the whole course of tuberculous disease more alarming to the patient than the spitting of appreciable quantities of blood. He may be in excellent health, may be working, sitting in a chair, or even sleeping, when without a moment's warning the mouth fills with blood. The amount of blood lost may not be more than a teaspoonful or it may be enough to greatly exsanguinate the patient and occasionally be even fatal. Because the patient often appears well he may try to attribute the bleeding to bad tonsils, spongy gums, in fact everything except pulmonary tuberculosis.

## VIII. EXAMINATION FOR TUBERCULOSIS

*Physical examination.* When all clothing has been removed from the chest the findings on inspection may vary from an entirely normal appearing chest to one showing marked retraction and considerable immobilization of the walls. Again, the general appearance of the patient may vary from that of normal health to that of extreme illness, paleness, and emaciation. The patient who appears in good general condition may have only an early lesion that has not brought him to the appearance of an ill man, or he may have a more extensive lesion of considerable duration, but of so low toxicity as to affect his general appearance only slightly or not at all, or his resistance gradually built up may have become high. If the disease is of an active and progressive nature one or both pupils may be over-dilated. If the disease is of long standing osteotrophy may be present. Retraction of any part of the chest usually indicates disease of long standing, and in pulmonary tuberculosis it is most often observed over the upper parts of the chest. The cardiac apex impulse may be displaced to the right, left, or even downward because of retraction of the lung, the presence of adhesions, or the presence of fluid or air in the pleural cavity. Lagging of the chest wall may be seen in patients with only slight areas of disease because of the reflex protective mechanism. In such cases the phrenic wave (Litten's sign) is definitely diminished even though the lesion may be located in the apex of the lung. These signs may also be caused by conditions other than tuberculosis, therefore they are not diagnostic but represent a part of the evidence which must be obtained in the course of a careful examination leading to a diagnosis.

On palpation over the upper margin of the trapezius muscle as well as other muscles over or attached to the chest wall, a tenseness of the muscles may be felt. When this is present it may lead one to suspect active and perhaps fairly recent disease within the same side of the chest. If instead of tenseness there is flabbiness or even palpable evidence of atrophic changes in the muscle one may suspect the presence of an old lesion and perhaps an inactive one within the chest on the same side. In addition to the condition of the muscles trophic changes in the skin, such as a loss of subcutaneous fat, may be found upon the side of the disease.

Vocal fremitus may be definitely increased over areas of consolidation of lung tissue or definitely decreased over areas of thickened pleura or pleural effusion.

The percussion note over a tuberculous lung may vary from one that is quite normal to one that is hyperresonant or even tympanitic over a pneumothorax or a cavity, or to one that is dull and even flat over fluid or a consolidated area. A very small or a deeply seated lesion may cause no impairment whatsoever; the degree of impairment depends to considerable extent, therefore, upon the size and nature of the lesion as well as its proximity to the surface.

On auscultation changes in the breath-sounds depend to a great extent upon the size, nature, and position of the lesion. They may be entirely absent over a pneumothorax, the upper part of a large intrapulmonary cavity, or over fluid. On the other hand they may reach the other extreme when one elicits loud bronchial or even cavernous breath-sound. Again, the breath-sounds may be entirely unchanged, and Heise points out that if changes occur they are of very little value in the diagnosis of pulmonary tuberculosis unless they are so marked as to approach the bronchial type of breathing. Of course, this does not mean that less marked changes should not be recorded. It does mean that the interpretation of such changes should be guarded. Vocal resonance may vary also from the normal in slight lesions to pectoriloquy over empty cavities located near the surface. From a very careful study of a fairly large series of cases under excellent control Heise arrived at the conclusion that: "A râle heard especially in the upper portion of the lung, and particularly the moderately coarse râle, is a very reliable diagnostic sign of clinical pulmonary tuberculosis. As a matter of fact, it is the only reliable auscultatory sign unless the changes in breathing are very marked. It is not to be inferred from this, however, that whenever râles are heard clinical pulmonary tuberculosis is always present." So excellent is Heise's work on the auscultatory signs in the diagnosis of pulmonary tuberculosis that all clinicians should become well acquainted with it.

Inasmuch as râles constitute our most important physical sign in pulmonary tuberculosis, it is fitting to discuss at this time the classification, elicitation, and location of râles. The day is gone, and, let us hope, forever, when the student of medicine was compelled to spend hours learning elaborate classifications of râles, which in a practical sense meant nothing. The simpler the classification that will serve the physician in general practice the better. I know of no more satisfactory classification from this point of view than that recently presented by Brown: "I clas-



sify adventitious pulmonary sounds in regard to their probable place or origin, passing from within outward as follows: (1) rhonchi or sonorous and sibilant râles; (2) coarse râles (moist, some would call them;); (3) moderately coarse râles; (4) fine râles; (5) crepitant râles (rarely heard in pulmonary tuberculosis and indicative always of tuberculous pneumonia or bronchopneumonia) and (6) pleural friction sounds. The usual râle in pulmonary tuberculosis, is, following this classification, the moderate coarse, heard in the earlier stage only during the inspiration that follows the expiratory cough, which I have mentioned. Later on it can be heard following any cough that is not too hard and not too noisy. Later still it is plainly evident on ordinary breathing, but when it occurs under this condition the case, in my experience, has always passed the incipient, or, as we shall soon call it, the minimal stage of pulmonary tuberculosis. I refer, let me say again, only to râles occurring above the second rib and third dorsal vertebral spine."

The elicitation of râles is easy when they are present. One is safe in saying, with Dr. David A. Stewart, that when the proper method of eliciting râles is employed, and the physician is not certain of their presence, they are absent in at least 95 per cent of the cases. In the elicitation of râles in pulmonary tuberculosis ordinary breathing or even deep breathing will not always suffice. In every examination the expiratory cough should be employed. This merely consists of asking the patient to exhale and just before the air is gone produce a light cough, then inhale slowly but deeply. This procedure is repeated until the examiner has listened over all parts of the chest. If râles are present they will be heard immediately following the cough or somewhere along the course of the inspiration. Typically, they occur near the end of inspiration. This procedure will bring to the examiner's ear distinctly audible râles which may not be elicited in any other manner, therefore it must be made a part of the routine examination of the chest.

The location of râles with reference to the region of the chest is of great importance in diagnosis. It is a well-established fact that adult pulmonary tuberculosis usually manifests itself first at or slightly below the apex of the lung. From here, if progressive, it usually spreads downward. This means that in the small lesion the signs like râles will first be heard over the upper part of the lung, but as the disease progresses they may finally be heard over all parts of the lung. Indeed, it has been said that if râles are heard only over the upper third

of the lung they must be considered due to tuberculosis, unless that disease can be ruled out; if they are heard only over the middle third of the lung, they must be considered as due to tuberculosis in about one-half of the cases, but if they are heard only over the lower third of the lung they must be considered as not due to tuberculosis until that disease can be proved present. Of course, no rule can be followed to the letter, so every case must be studied by all available methods until proof positive is obtained.

In the past, too often the physical examination has been regarded as a phase of the examination for tuberculosis, which only the most expert are qualified to do properly. Far too much emphasis has been placed upon slight and indefinite signs. Now we know that such signs in many cases only lead to confusion and are of no significance, and that we may depend upon a few simple signs in a large percentage of cases. This fact helps to eliminate confusion, and makes every well trained physician confident of his physical findings. There are, and will be, questionable cases among the clientele of every physician, cases in which it takes a long time to arrive at a diagnosis. One or a few examinations will not suffice, but such patients must be observed and examined frequently over long periods of time. One fact that should be firmly impressed upon every physician is that though the physical examination may reveal no abnormal findings, yet the patient may have pulmonary tuberculosis. Physical examinations merely constitute one phase of the whole enquiry, and there are many other phases of the enquiry and all are necessary for arrival at a final diagnosis.

*X-ray examination.*—The fluoroscopic examination is of considerable value in studying movements of the diaphragm; position, size, and shape of the heart; the presence of pleural effusion; the presence of pneumothorax; and the presence of extensive disease in the lungs; but it should never be relied upon for the detection of disease in early or questionable cases. Small lesions and even lesions of considerable size may remain undetected when the *x-ray* study is limited to the fluoroscopic examination. Indeed for detailed study of the lungs stereoscopic plates are indispensable.

In extremely early active tuberculous infiltration in the lung the *x-ray* may be of no help. Such infiltration in the adult most commonly appears in the periphery of the lung above the level of the third rib or slightly above or in the region of the lung hilum. As time passes the infiltration near the periphery of the lung casts *x-ray* shad-

ows, which on the negative appear light and fuzzy like bits of cotton. The word "mottling" is most commonly used to describe the shadows, and Amberson describes mottling as closely resembling cirrus clouds. The center of the area of mottling is always its densest part, whereas its periphery gradually shades off into the normal lung markings. The central and dense part of the area of mottling has been interpreted as representing the tuberculous deposit while the peripheral clouding is believed to represent the perifocal inflammation. Leading from the mottling toward the lung hilum there are usually seen along the linear markings and the bronchial trunks fuzzy areas which have been likened to the pussy willow. As the disease progresses the mottling may spread over considerable areas and the shadows give evidence of coalescence. After a careful study of the finer anatomy of the lungs as well as the  $x$ -ray and postmortem examination of tuberculous lungs, Dunham has pointed out that typically the  $x$ -ray shadow of an early tuberculous infiltration is in the shape of a cone with its base directed toward the periphery of the lung. Tuberculous infiltration may proceed with considerable rapidity, often extending over a large area within a few weeks. In other cases it proceeds slowly, requiring from months to years to become extensive.

The denser the area involved becomes the deeper the shadows appear on the  $x$ -ray plate. Therefore, in areas of tuberculous disease with consolidation the densest shadows are interpreted as caseation and these usually appear where the dense areas in the mottling were first seen. Ordinarily it requires more than a month for the area under study to show  $x$ -ray evidence of changes from infiltration to caseation. As the very dense shadows representing caseation increase, the peripheral mottling representing infiltration and inflammation spreads. This nearly always spreads with greater rapidity than the areas of caseation.

After the areas of caseation are well established in most cases parts of dense shadows representing caseation become less and less dense and often entirely disappear, thus leaving areas of rarefaction. Such areas may be small and numerous making the area appear as honey-comb, or they may be larger. Sometimes a single large area of rarefaction appears on the plate. By the coalescence of smaller areas a tremendous area may result involving the greater part or even the whole of an upper lobe. These areas of rarefaction seen on the  $x$ -ray plate represent *cavitation*. Cavitation is commonly seen at the ex-

treme apex, or at the level of the first interspace. While it is true that a lung may present extensive cavitation in the course of a few weeks the process usually requires months and even years.

A study of the hilum shadows usually reveals a definitely enlarged and widened hilum on the side of the disease. The hilum outline usually is irregular and has a fuzzy appearance. Most of the shadows no doubt are due to actual tubercles as well as enlarged and diseased hilum lymph nodes.

The above description of the  $x$ -ray findings is from plates taken serially during the process of development of the disease. The first time the patient is seen the  $x$ -ray plate may reveal any stage described. Therefore, from a single pair of plates one may not be able to determine whether the disease is undergoing progression, retrogression, or is stationary. It is only when plates are taken serially at rather frequent intervals (every month or six weeks) over considerable periods of time that they render their greatest value to the clinician. The findings from such plates when used to supplement the clinical findings are of invaluable aid, not only in determining the extent of the disease and the rapidity with which it is developing, but also in studying the process of healing or repair. They aid not only in determining the treatment from time to time but also in rendering a prognosis.

Perhaps more has been learned about the healing of clinical tuberculosis in man through the study of  $x$ -ray plates than through any other method. The physician may first see the patient after healing has begun, and, therefore, should know the evidence of healing which may be first manifested through the study of serial plates. As healing begins, definite changes manifest themselves in the hilum shadows, the hazy outline is replaced by a sharp and clear outline as the shadows begin to shrink and become more compact. Often there appear small but very definite opacities which are interpreted as deposits of calcium. The tendency to develop such deposits about the hilum is much greater in children than in adults.

In the repair of a tuberculous process fibrosis often plays a very important role and stereoscopic  $x$ -ray plates aid greatly in detecting evidence of its presence and development. When a consolidated area becomes fibrosed there are to be seen heavy bands (appearing light on the negative) gradually replacing the dense shadow cast by the consolidated area. These bands extend from the hilum to the periphery and as time goes on it can be seen in serial plates that the



original area has very definitely shrunk in size. By this time the band-like shadows cast by the fibrous strands stand out very distinctly.

In lesions where only mottling is seen the evidence of fibrosis may be revealed on the  $x$ -ray plate by the numerous trunks radiating from the hilum to the area of mottling, becoming more sharply outlined and denser, and along with this they appear smaller. This process continues until finally there is seen an intertwining of string-like shadows leading from the hilum where they are heavier toward the periphery, gradually becoming finer and finer until they disappear before reaching the periphery. Along with the appearance of these shadows representing fibrosis there is usually a disappearance of the mottling and a final very definite reduction in the size of the area involved. As time passes the string-like shadows may continue to become finer and finer or they may unite to form a fibrous band. In other cases as Amberson has pointed out, thin dense shadows may be seen to grow out from the hilum along one of the bronchial trunks and completely entangle the area of mottling. Later in such cases a heavy band may be seen along the lower border of the lesion and as retraction occurs the lesion is not only made much smaller but actually crowded upward.

Again, the fibrosis may become so extensive as to involve the pleura. In such cases the mottling is often replaced by a dense homogeneous shadow representing fibrosis. Often this shadow is partially due to marked thickening of the pleura. In such cases as time goes on with retraction there results a displacement of adjacent structures such as the heart, trachea, diaphragm and even the chest wall toward the side of the original lesion. Such findings are always good evidence of extensive fibrosis. Fibrous involvement of the pleura often results in irregularities and peaking of the diaphragm and sometimes the complete obliteration of the costophrenic angle. When the pericardium is involved there may appear irregularities in the cardiac outline, as well as changes in the cardiophrenic angle.

When calcification occurs the stereoscopic plates usually furnish definite evidence of it. Inasmuch as calcium deposits occur only in areas of caseation there can be seen in serial plates increasing densities within the areas interpreted as caseation. These densities finally become sharply outlined and opaque. They may take on various shapes but often they are spherical. Areas of calcification usually appear in the oldest part of a tuberculous lesion. They have

been found to develop in six to eight months but usually two years are required for them to appear in the adult lung. There is no  $x$ -ray evidence to show that areas of calcification ever disappear by absorption, but they are known to ulcerate through the bronchi and be expectorated as lung stones.

Before the days of the  $x$ -ray it was believed that pulmonary cavities were never obliterated. Indeed it is only within the last few years that  $x$ -ray evidence has accrued to show that certain cavities may completely disappear. In these cases the obliteration of the cavity is always the result of fibrosis. Around the area of rarefaction interpreted as cavitation a dense ring appears which is interpreted as a fibrous wall. As time passes the fibrosis increases and the ring contracts making the cavity smaller. It may remain round or it may become somewhat irregular in outline. If the cavity is not too large this process may continue until the cavity completely disappears and there remains in its former site an area of heavy clouding or in some cases only small deposits of fibrous tissue. In such cases it is believed that as a result of fibrosis the walls of the cavities are brought into apposition and become adherent. The largest cavity that Amberson has observed to disappear in this manner measured four centimeters in diameter on the  $x$ -ray plate and required two years and four months with the patient under ideal dietetic and hygienic treatment. When multiple cavities exist obliteration usually does not occur.

*Laboratory examinations.*—After all, in the diagnosis of tuberculosis it is only a demonstration of tubercle bacilli that is acceptable to the courts. However, it would be the greatest of mistakes to reserve the diagnosis until tubercle bacilli are demonstrated, for frequently, indeed usually, they cannot be demonstrated at once in early cases in which there are the best prospects of recovery. To postpone treatment until bacilli are demonstrated is to materially reduce the patient's chances of recovery. In every case, however, there should be persevering effort to discover the tubercle bacilli. This is done by the laboratory methods of examining, with the microscope, the excreta of the patient, by animal inoculation, and by biopsy.

*Microscopic examination of the sputum.*—Smears are made of the suspected sputum in the usual manner and stained by the Ziehl-Neelsen method. If tubercle bacilli are found, the result should be confirmed. In these days when compensation so often is granted for illness contracted while in the employ of certain institutions or

organizations, one occasionally encounters malingerers. Such persons have been known to submit for examination, instead of their own sputum, that of patients known to be expectorating tubercle bacilli. Therefore, in certain cases it is always well to collect a certified specimen for study. If the positive sputum finding is confirmed it is usually safe to state that tuberculosis exists. However, the possible presence of paratubercle bacilli must never be overlooked. A sputum examination which reveals no tubercle bacilli is of no significance—yet frequently even physicians collect a single specimen, send it to a laboratory, and upon receipt of a negative report inform the patient that tuberculosis does not exist. Twenty-five, fifty, or even more smears may be made without finding tubercle bacilli, and yet the next smear may show an abundance of them. If ordinary smears do not reveal the presence of tubercle bacilli, the search must not be abandoned although numerous attempts have been made. Several methods for concentrating the bacilli have been devised, and these should next be employed. One consists of collecting the sputum for two or three days, then adding to the total amount 15 per cent by volume of antiformin (a preparation consisting of a mixture of sodium hydroxide and sodium hypochlorite, obtainable from commercial houses). This reduces the consistency of the sputum to fluid, which should be thinned with alcohol or water and centrifuged. The sediment collected is washed in water, centrifuged again, and from this smears are made which are stained in the usual way. Not infrequently bacilli are demonstrated in this manner when it is impossible to find them by the direct smear method.

*Animal inoculation.*—Animal inoculation should be made in all suspected cases when tubercle bacilli cannot be demonstrated by the microscope. For this inoculation work it is well to use both guinea-pigs and rabbits because of the great susceptibility of the guinea-pig for the human type and the rabbit for the bovine type of tubercle bacilli. Various methods have been described for inoculating animals, but perhaps the one most commonly used in the past has been to inoculate the suspected material into the peritoneal cavity of the laboratory animal. The methods of inoculating laboratory animals have been considerably modified from time to time, but the subcutaneous inoculation into the inguinal region is so valuable and easy to perform that it is fast coming to supersede other methods. This method is so simple that it requires no special laboratory skill and can even be performed

without the usual laboratory facilities. About one-half cubic centimeter of the suspected material, such as sputum, is injected subcutaneously into the inguinal region of the animal. In most of the positive cases in approximately ten to fourteen days the inguinal lymph nodes on the side of the injection become markedly enlarged and palpable. It is not necessary to section these nodes and study them microscopically since so many have been studied in this way and the findings are usually those of a tuberculous lesion. To confirm the diagnosis, however, the hair is shaved from a small area, preferably the side of the guinea-pig, and .005 of a cubic centimeter of Old Tuberculin is injected intradermally. The solution is made by diluting 0.5 cubic centimeters of Koch's Old Tuberculin with 9.5 cubic centimeters of normal saline containing one-fourth of one per cent phenol. Of this solution 0.1 cubic centimeter contains 0.005 cubic centimeter of tuberculin. In six to forty-eight hours in the positive cases a local reaction is manifested around the site of the injection in the form of a hyperemic zone. The animals which show negative lymph nodes and negative tuberculin tests are kept under observation for several days and tuberculin tests repeated. However, if the test does not become positive within a few days after the second week it is quite safe to report a negative finding.

It has been shown that the guinea-pig, even when kept in captivity, does not often spontaneously contract tuberculosis. However, in order to rule out possible error it is best to keep a few guinea-pigs in stock which are known to be negative to the tuberculin test.

This test is easily performed, is accurate, and often enables one to make a diagnosis weeks before it could otherwise be made. Since early recognition is of vast importance this test deserves to be frequently employed.

Brown has pointed out that the presence of elastic tissue in the sputum indicates activity of the tuberculous lesion in 100 per cent of the cases. For a long time the presence of elastic fibers in the sputum has also been held to be definite evidence of tuberculosis. Therefore, the sputum should be examined carefully for elastic fibers in each case. The technic consists of adding sodium hydroxide solution to the sputum, centrifuging, and treating the sediment for twenty-four hours with a preparation consisting of 1 gram of orcein, 40 grams of water, 80 grams of alcohol (95 per cent), and 40 drops of nitric acid. At the end of twenty-four hours the preparation is washed in water and differ-



entiated in a solution consisting of 50 grams of alcohol (90 per cent) and one drop of hydrochloric acid. When examined under the microscope the elastic fibers are colored dark-reddish brown.

*Pleural effusion.*—For diagnostic purposes a small amount is removed, centrifuged and smears made of the sediment. These are stained by the Ziehl-Neelsen method. If negative, sediment is inoculated into laboratory animals after the method described for sputum.

*Feces.*—At one time it was believed that the presence of tubercle bacilli in the feces was indicative of intestinal tuberculosis. Now we know that in many cases of pulmonary tuberculosis tubercle bacilli may be recovered from the feces. If tubercle bacilli are found in the sputum, examination of the feces is unnecessary, but many persons, particularly women and children, swallow most of their sputum. In such cases when specimens of sputum are not obtainable an examination of the feces may reveal the bacilli. Moreover, it has been shown that virulent tubercle bacilli may reach the intestinal tract through the bile even when they are not being excreted in any other manner. Therefore, the examination of feces for tubercle bacilli is a very important phase of the patient's examination. For the detection of tubercle bacilli in the feces the technique recommended by Calmette is as follows:

"Thirty grams of material are weighed out in a conical vessel and 55 c.c. of sterile water and 15 c.c. of antiformin mixed with it. The mixture is shaken several times and allowed to stand for three or four hours, after which it is centrifuged and the supernatant fluid poured off. The sediment is collected in a sterile vessel and diluted with 8 to 10 c.c. of physiological salt solution. It is next filtered through two or three double layers of sterile gauze and inoculated in doses of 2 to 3 c.c. into three or four

guinea-pigs, under the skin in the inguinal region."

*Urine.*—Tubercle bacilli in the urine usually point to a renal tuberculous lesion. However, it is believed that in cases of tubercle bacillemia very small nonfollicular lesions may develop in the kidney and allow the bacilli to pass into the urine. Therefore, examination of the urine should always be made. The first step in the examination is to collect a twenty-four hour specimen. After the sediment has settled to the bottom of the container the upper portion is siphoned off and the remainder is centrifuged. The sediment is stained in smears and at the same time laboratory animal inoculations should be made. If the case is more urgent, or tubercle bacilli have been demonstrated in the urine, specimens should be collected from each kidney separately. These specimens should be immediately centrifuged, the sediment suspended in a small amount of normal saline, and inoculated into the inguinal region of animals.

*Pus from tuberculous abscesses.*—It was thought formerly that pus from tuberculous abscesses draining on the surface of the body such as psoas abscesses rarely or never contain tubercle bacilli. Careful studies have proved that tubercle bacilli may be recovered from the discharge in most of these cases provided the method of animal inoculation is employed. Here the technic is the same as with the sputum.

In certain conditions, such as cervical adenitis, even after careful study we may have to resort to the removal of a suspected lymph node. Sections of this node may be studied under the microscope, while other parts should be ground up and inoculated into animals as is done with sputum.

Laboratory examinations constitute an important phase of the general examination and should be carried out for every patient.

(To be continued)

## INFANTILE PARALYSIS AND TUBERCULOUS MENINGITIS

By ROOD TAYLOR, M.D.

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In the past two years the writer has treated three cases of infantile paralysis, which, in their earlier course, bore a resemblance to tuberculous meningitis.

The first case was encountered August 16, 1925, on which date no infantile paralysis was

known to exist in Minneapolis. However, a definite epidemic evolved shortly thereafter, and the second case came during the course of this epidemic. The third case developed in September, 1926, and was neither preceded nor followed by others.

The patients were aged, respectively, six years, eight years, and ten years. The first was a girl, the others boys.

In Case III the onset was abrupt with fever, vomiting, and headache. In the other two cases, fever, stiff neck, and marked prostration developed more gradually. The one patient (Case III) was alarmingly ill at the end of thirty-six hours, the others at the end of seventy-two.

Stupor was the outstanding symptom in all three cases. In the first it endured two days, in the second six days, and in the third three days.

The following paragraphs show the course of each case:

CASE 1.—J. M., girl, aged 6 years. Good family history. Previously well except for the usual diseases of childhood and for repeated tonsillitis. The tonsils and adenoids had been removed on July 29, 1925.

August 16, 1925, onset with slight fever and some stiffness of the neck.

August 17-18, gradual increase of prostration, continued stiffness of the neck, rectal temperature up to 101.5°.

August 19, stupor. The leukocyte count was 15,200. Spinal fluid under increased pressure containing 180 cells to the c.mm. with both polymorphonuclears and lymphocytes.

August 20, consciousness clearer following lumbar puncture, generalized muscular twitchings, restlessness.

August 21, consciousness clear. Deep reflexes increased, especially on left. Eye-grounds normal, Skin tuberculin test negative.

August 25, stiffness in arms.

August 26, temperature, which had been normal five days, rose to 102.2° by rectum, and was associated with stiffness of legs and positive Kernig's sign on the left side. A lumbar puncture partially relieved the symptoms.

September 3, paralysis of the left peroneal muscles.

Subsequent course: General health has been excellent. There is still some weakness; but no crippling in left foot.

In this case the points suggestive of tuberculous meningitis were:

1. The absence of any epidemic of infantile paralysis.
2. The gradual onset of symptoms three weeks after a tonsillectomy.
3. The initial symptoms: slight fever, stiffness of the neck, and a slowly developing stupor.
4. The association of meningeal symptoms with the comparatively low white blood corpuscle count of 15,200, which is decidedly lower than is usually met with in meningococcic meningitis.

A presumptive diagnosis of infantile paralysis

was made upon the finding of a considerable number of PMN's in the spinal fluid, and was confirmed by the subsequent course.

CASE 2.—W. K., boy, 8 years. Family history, negative. Patient's previous health, good.

September 19, 1925, fever, stiff neck, moderate prostration.

September 22, stupor. Cerebrospinal fluid clear; 45 cells; Nonne, faintly positive.

September 23, examined by Dr. W. A. Jones, who found almost complete loss of consciousness, moderate stiffness of the neck, and a Babinski's sign positive on both sides, but could not demonstrate any paralysis.

September 24, stupor continues. Repeated slight convulsions.

September 25, stupor combined with great unrest. Left arm very weak. Cerebrospinal fluid clear; 65 cells; Nonne, negative.

September 26, consciousness returning. Said "No" loud and clear. Neck rigidity decreased. Moved left arm freely.

September 28, sensorium clear. Reflexes normal. No paralysis.

September 29, temperature, which had not been over 100° for a week, rose to 104.2°, and there was a positive Kernig on both sides. Spinal fluid under increased pressure; 25 cells to the c.mm.

September 30, temperature normal. Sensorium clear. Neck very slightly stiff. Kernig's less positive than on September 29. Knee jerks present. Eye-grounds normal.

October 2, both knee jerks present. No paralysis. Kernig's sign bilaterally slightly positive.

October 9, for last week has had recurrent diarrhea; on October 7 the stools were bloody. All reflexes normal except for Kernig slightly positive on both sides, and for positive Babinski on left. General condition excellent.

October 19, discharged without any demonstrable sequelæ.

The subsequent health of this patient has been good.

In this case the points suggestive of tuberculous meningitis were:

1. The gradual onset.
2. The slight stiffness of the neck.
3. The stupor, which persisted for six days.
4. The absence of discoverable paralysis. In this case the spinal fluid examination did not make the diagnosis easy as the cells were practically all small lymphocytes. The fluid, however, contained no coagulum or pellicle, such as is usually present in tuberculous meningitis. A presumptive diagnosis of the meningo-encephalitic form of infantile paralysis was made largely because of the presence of other cases in the community. The patient's subsequent good health is strong proof of the correctness of the diagnosis.



CASE 3.—W. M., boy, aged 10 years. Personal and family history, negative.

September 6, 1926, headache, fever.

September 8, fever, headache, vomiting, slight stiffness of neck.

September 9, stupor and stiffness of the neck. Temperature 103°; white blood corpuscles 26,400 with 92 per cent polymorphonuclears. Cerebrospinal fluid under increased pressure clear, no pellicle, Nonne negative. Cell count 342, 40 per cent polymorphonuclears and 60 per cent lymphocytes.

September 10, neurological examination by Dr. A. S. Hamilton, who found weakness of the masseters and of the muscles supplied by the right third nerve. Cerebrospinal fluid shows 49 cells to the c.mm.

September 11, stupor continues, weakness of tongue and jaw muscles. Breathing is shallow and almost entirely diaphragmatic.

September 12, consciousness clearer, neck less stiff, breathing partly costal and stronger.

The subsequent course was uneventful. There is a residual paralysis of both masseters and of the entire right side of the face, which is gradually improving.

In view of the relatively stormy onset in this case, meningococcic meningitis seemed probable. This suspicion was heightened by the high polymorphonuclear leukocyte count in the blood. The points against the early stages of meningococcic meningitis were conclusive, viz:

1. A transparent cerebrospinal fluid.
2. The presence of as many as 60 per cent lymphocytes in the spinal fluid.
3. The absence of meningococci in the spinal fluid.

Tuberculous meningitis occasionally begins fairly abruptly and had to be considered. The points suggestive of tuberculous meningitis were the stupor and the partial paralysis of the facial muscles.

Against tuberculous meningitis was the result of cerebrospinal fluid examination showing that 40% of the cells were polymorphonuclear and that there was no pellicle.

In this case the diagnosis of the probable in-

fantile paralysis was made by exclusion and confirmed by the typical residual paralysis.

All three of these patients had meningitis. The first and the third came in the absence of an epidemic, but the course, the nature of the spinal fluid, and the squelæ demonstrated that the meningitis was due to the virus of infantile paralysis.

Patient No. II had no residual paralysis and was stuporous for six days; but the character of the spinal fluid was such as is found in infantile paralysis, and the attack occurred midway during an epidemic.

Three further points in the differential diagnosis between the meningitis due to tuberculosis and that due to infantile paralysis present themselves. The first is of value only if accurate information as to the patient's previous state is at hand. It is this that the active symptoms of tuberculous meningitis precedes for several days or a week, or even longer, by a change in the patient's personality. The child becomes dreamy. He wants to lie about and dislikes being disturbed. The mother often overlooks this point and her negative evidence will not count against a diagnosis of tuberculosis.

The second point is that the bowels move easily and require only slight purgation in the meningitis of infantile paralysis, while in tuberculous meningitis, until the terminal stages, they are moved only after drastic purgation.

The third point concerns the nature of the spinal fluid. The cell count and the type of cells may be much the same in both diseases, although in the earlier stages of infection with the virus of infantile paralysis the fluid shows a preponderance of polymorphonuclear cells; but the fluids are distinct in this that in the tuberculous variety only does a pellicle form on standing.

The recital of these cases shows that the diagnosis of infantile paralysis is sometimes uncertain and that it must always be kept in mind as a cause of meningitis.

## ABDOMINAL INJURIES, WITH REPORT OF FIVE CASES\*

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The subject of abdominal contusions with attendant injuries to the abdominal viscera should be of great interest to both the general practi-

tioner and the general surgeon. When great force is applied to the abdomen, either directly or indirectly, the stomach, the large or small bowel, or the bladder may rupture. This is particularly likely to occur if the organ is distended.

\*Presented before the Seventeenth Annual Meeting of the Minneapolis, St. Paul & Sault Ste. Marie Railway Surgical Association, at Chicago, Illinois.

The colon is less subject to such injury than the small bowel. Mesenteric separation with resulting hemorrhage is more likely to follow indirect violence. The solid organs may be contused, torn, or ruptured, the liver, spleen, and pancreas being involved in about the order mentioned. All these injuries are critical because of the accompanying hemorrhage or the resulting general peritonitis, extravasation of urine, or fat necrosis. It is vital, therefore, that an early diagnosis be made and appropriate treatment promptly instituted.

The diagnosis of these conditions is frequently difficult immediately after the injury, but delay is dangerous to life. When a careful review of symptoms and physical signs leaves serious doubt as to the condition within the abdomen, there should be no hesitancy in advising exploration for diagnosis. A perusal of the literature and a review of the five cases reported later in this paper lead one to the conclusion that pain is the most constant subjective symptom. It begins promptly and gradually increases in intensity. Other symptoms, such as vomiting, evacuation of the bowel, bloody vomitus or stool, suppression of urine, or painful, bloody urination may be present. Their presence does not invariably indicate visceral damage. The important signs are thoracic respiration, abdominal tenderness, and rigidity of the abdominal wall. With excessive hemorrhage or fluid from other sources in the peritoneal cavity, shifting dullness may be found in the flanks. In rupture of the stomach or bowel large amounts of gas may escape, resulting in tympany over the area normally occupied by liver dullness.

Without appropriate surgery these conditions are almost universally fatal. After the abdomen is opened the injury should be quickly located and the damage repaired. Drainage following operation should almost always be used. Fluids rectally, subcutaneously, or intravenously are usually necessary. Morphine is indicated for relief of pain and limitation of peristalsis. Intravenous glucose solution and insulin should be of great value in such cases. Surgery to be successful must be prompt and the exploration should be undertaken as soon as the condition of the patient permits.

The case reports follow:

CASE 1.—Mr. J. A. P., aged 51, was kicked in the abdomen by a horse. He was first seen about four hours after the injury when he complained of general abdominal pain. Examination revealed thoracic respiration with marked tenderness and rigidity and tympany over the entire abdomen. The liver dullness was replaced by tympany. A diagnosis of rup-

tured bowel was made, and abdominal section performed about eight hours after the injury. The abdominal cavity was filled with fluid bowel contents and the peritoneal surfaces generally were injected and lusterless. A perforation in the ileum two feet from the cecum was found and closed with purse-string of catgut and reinforced by two silk Lembert sutures. Drainage of the pelvis was established by a split rubber tube. After-care consisted of Fowler's position, fluids by rectum, starvation, and morphine. Recovery was uneventful, but shortly after his return to work he developed an enormous ventral hernia through the line of incision. He is alive and working his farm at present, eight years after the injury, and suffers so little inconvenience from his hernia that he has never submitted to its repair.

CASE 2.—H. C., aged 21, was driving a team which, in running away, threw him with considerable violence from the wagon against a telephone pole. He arrived at the hospital within half an hour after the accident. Examination revealed a well-nourished, very muscular young adult male whose face was pale with cold, moist skin. The extremities were cold. There were a contusion of the skin over the right lower part of the abdomen and a fracture of the lower third of the left femur. The patient was pulseless at the wrist. After administration of morphine and external heat considerable improvement occurred in his general condition, and three hours later the femur fracture was reduced under gas anesthesia and the leg immobilized in a Thomas splint. The patient complained of considerable pain in the abdomen, and the pulse was very weak and rapid. At this time considerable rigidity of the abdominal wall was present, particularly in the right lower portion. The same condition existed during the next thirty-six hours, and then gradually the patient became weaker and died thirty-eight hours after admission. Post-mortem examination revealed mesenteric separation of eighteen inches of the lower ileum from its mesentery with intra-abdominal hemorrhage. The patient should have been operated upon promptly and appropriate surgery would have saved his life. Operative interference had been refused.

CASE 3.—R. H., aged 54, was kicked in the abdomen by a horse about six o'clock in the evening, following which he suffered severe abdominal pain, which gradually increased and became more diffuse during the night. He was unable to sleep even with a hypodermic injection of morphine. He presented himself at the hospital the following morning in acute distress. His pulse was rapid and weak. Examination revealed nothing of note except marked tenderness and rigidity of the entire abdomen with tympany replacing the area of liver dullness and shifting dullness in the flanks. The respiration was entirely thoracic.

A diagnosis of ruptured bowel was made, and the abdomen was opened through a right rectus incision. The abdominal cavity was filled with fluid fecal material, and the peritoneum everywhere was dull and lusterless. A small perforation presented itself immediately beneath the incision. This was closed with special catgut and tube drainage established in the pelvis through a suprapubic stab.

Post-operative treatment consisted of morphine,



starvation, and forced fluids. The patient gradually became weaker and died forty-eight hours after admission and fifty-six hours after the injury was received. In this case treatment was instituted about fourteen hours after the injury and after a generalized peritonitis was firmly established. Earlier surgery might have saved his life.

CASE 4.—J. B., aged 43, insurance salesman, was struck by a rapidly moving car while standing in the road. He was hurled about forty feet by the impact. He was brought directly to the hospital where examination revealed a man, weighing about two hundred and twenty pounds, in severe shock with moist clammy skin, great pallor, and rapid pulse. The abdomen showed tympany over area normally occupied by liver dullness, and there was some tenderness, especially in the right lower quadrant. The right leg was crumpled below the knee with skin perforations of anterior surface of the leg and marked comminution of both the tibia and the fibula. The patient was mentally confused. Morphine and external heat were administered, and the patient was prepared for laparotomy with a diagnosis of ruptured bowel. Incision was made under local anesthesia and ether. The abdomen was full of blood and fluid bowel material. About fifteen inches of ileum were completely detached from the mesentery, and an opening the size of a dime was found in this detached bowel, which was resected, closing with a lateral anastomosis. The pelvis was drained with a rubber tube through a suprapubic stab. Post-operative treatment consisted of fluids by rectum, morphine, and stimulants hypodermically and daily gastric lavage. Brownish fluid containing blood was aspirated daily from the stomach, and finally an attempt was made to keep continuous drainage of the stomach through a duodenal tube. This was not very successful, however, as the patient would not leave the tube in place. The patient gradually became weaker and died on the evening of the sixth day. Post-mortem examination revealed good union of the anastomosis without adhesions. There were small areas of adhesions between loops of the small bowel elsewhere through the abdomen and the bowel was greatly distended without evidence of mechanical obstruction. Death was attributed to paralytic ileus.

CASE 5.—C. E., aged 9, male, twenty-four hours before admission to the hospital fell from a height of seven feet striking the abdomen on a bar. About ten minutes after the accident his bowels moved, and he vomited. Pain, which began immediately in the upper left abdomen and lower left chest, was increased by moving, talking, or taking a deep breath. There was no blood in the vomitus or in the stool. He appeared acutely ill. Respiration was chiefly thoracic. Examination revealed a moderate acceleration of the pulse without other abnormal findings except in the abdomen, which was moderately distended and everywhere moderately tender and rigid. Both these signs were most marked in the left upper quadrant. The liver dullness was apparently normal. A diagnosis was made of intra-abdominal injury, probably rupture of the spleen. The abdomen was opened by means of a left rectus incision in the upper quadrant, and the abdominal cavity found filled with liquid and clotted blood. Complete ex-

ploration was made, beginning at the spleen with negative results. In the meantime active hemorrhage had begun following pressure changes on opening the peritoneal cavity. On second examination complete rupture of the spleen was found beginning near the hilum and extending completely through the entire organ to, but not including, the capsule over the convex surface, where a slight groove was found. On first exploration this was mistaken for a lobulation, and its significance was overlooked. The spleen was removed and the abdomen closed with a small split-rubber drain placed in the region of the divided pedicle. This was removed in twenty-four hours. The recovery was uneventful, and the boy returned home on the tenth day.

This case is interesting for two reasons: first the recovery of a case of ruptured spleen reached by surgical means over twenty-four hours after the accident is unusual; second, it illustrates the difficulty which may be encountered in locating the pathology.

#### DISCUSSION

DR. JOHN V. R. LYMAN (Eau Claire, Wisconsin): I have had a few of these cases, one of rupture from the kick of a horse. The man was not brought to the hospital until twelve hours after the injury, when he was practically pulseless, with rigidity of the abdomen, and liver dullness absent. We diagnosed rupture, opened, and found multiple loops of the intestine ruptured, but the patient died within twenty-four hours.

Another type of case frequently met with is one with acute abdominal injuries which afterwards develop some trouble like so-called traumatic appendicitis or traumatic hernia. I believe that question is also open for discussion, because only recently three cases which were diagnosed as traumatic appendicitis have been reported. That phase of the subject interests us as railway surgeons.

DR. JOHN STEELE ABBOTT (St. Paul, Minnesota): In my own experience I recall two or three cases along this line. One case was that of a man who had a bullet wound in the lower left chest over the stomach area, and it was a question whether or not he should be operated on. I saw him in the evening, and in the absence of definite abdominal rigidity put him off. The next morning two or three different surgeons saw the patient and thought operation was advisable. We opened up the abdomen with an epigastric incision and found that the peritoneum had not been perforated. The bullet had hit the ribs and followed along, and I do not know where it went. Subsequent x-ray examination, which took in the upper part of the abdomen and lower part of the ribs, failed to show where the bullet was located. This patient developed an infection in his wound and the final result was post-operative hernia, from which he recovered.

I had another case of a negro boy who had been shot in the epigastrium and with quite definite signs of intra-abdominal injury. We opened him up and found that the bullet had entered the liver. There was a definite amount of free blood in the abdomen, not a great deal, but we reached the wound, sewed it up, and he got along all right.

The question of deciding whether or not to resort to operative interference in abdominal condi-

tions requires a good deal of courage on the part of the surgeon.

DR. DAVID J. TWOHIG (Fond du Lac, Wisconsin): The paper brings out one thing very vividly to my mind, and that is the necessity of quick operation after injury. If there is any place in surgery where immediate attention is required and where procrastination is liable to do great harm, I believe it is in abdominal injuries, where prompt decision is required, instead of waiting for unquestionable evidence of pathological conditions in the abdomen following injury.

There are two symptoms which were not brought out in the paper which I believe to be very important in connection with injuries of the liver and also of the spleen. With a ruptured spleen there is severe pain at the point of the left shoulder. In rupture of the liver we have just the opposite findings, namely, severe pain at the point of the right shoulder. It seems to me that those symptoms are very important factors to consider in connection with cases in which there is a question as to whether the injury involves the spleen or the liver.

One other point that we should very carefully weigh is the administration of morphine where there has been any abdominal injury. I do not believe that any patient with such an injury, regardless of how severely he may be suffering, should be given any morphine until we have made the probable diagnosis and know exactly whether that patient requires an operation or not. If the patient has pain in the abdomen so severe that he cannot tolerate it, there is then no question as to what should be done; he should be opened up and given the chance of immediate operation.

Other symptoms that have been mentioned here are very characteristic, but there is one thing I want to speak of in reference to the case of the insurance salesman who was struck by an automobile. Where a resection of the bowel is necessary, and especially where there has been an injury of the mesentery, it has been our custom to establish drainage directly from the intestine at the time of operation, putting a tube right into the intestine and fixing it in there for the purpose of letting the gas out of the intestine. It avoids the so-called ileus later. This measure lessens the danger of complications. I am not a very strong advocate of Fowler's position following that type of operation. I prefer to put a tube in either above or below the anastomosis to give the gas a chance to escape, allowing the patient to lie rather flat.

DR. GEORGE F. THOMPSON (Chicago, Illinois): The important points are the following: first, diagnosis; and, second, early operation. The diagnosis of a closed injury of the abdomen is sometimes very easy, the condition is quite apparent; and at other times it is extremely difficult. There is such a multiplicity of injuries that may occur, and the symptoms will vary so much in any given condition, that one can hardly go into discussion of these; that is, rupture of the bladder, spleen, pancreas, etc., present so many symptoms that we can hardly consider them all in a brief discussion. But an early diagnosis is the important thing.

The symptoms upon which a diagnosis can be made have been mentioned: first, the history; second, abdominal pain and tenderness, and the rigidity

which will soon follow; third, the presence of gas can be established in the abdominal cavity, but, usually, unless one is a very good physical examiner, it is difficult to detect the presence of gas, and by the time the fluid and shifting dullness can be recognized it is hard to operate on the patient. Gas can be detected by examination over the liver, and by shifting from one side to another we can locate the gas. By *x*-ray this can be easily determined both in lateral and vertical position.

The symptom of pain in the right or left shoulder, referred to by Dr. Twohig, is important when present, but I have seen cases without symptoms of pain in either shoulder. However, they are important when they do occur. I have seen the symptom of severe pain in the left shoulder in a case of ectopic pregnancy. It is more important to make a provisional diagnosis and get into the abdomen as soon as one can in these cases, rather than to hesitate.

A short time ago I saw a man who had fallen seven or eight feet, but had marked symptoms of intra-abdominal injury. I saw him with Dr. Dyas, and we decided to operate. We opened up and went through the abdomen from one end to the other and found nothing, but we noticed that he had a large amount of fluid contents in his bowel, and I had noticed before that when we held the bowel up to explore there was gas above and fluid below. This was explained the next day when he passed a large amount of blood through the bowel. He made an uneventful recovery.

Dr. Sattre was unfortunate in seeing his cases so late; the earliest, I believe, was eight hours, and that patient recovered. That shows what one can do. When the case is seen inside of four hours, if there is not too much concomitant injury and not too much shock due to the injury, these patients recover in 90 percent of cases. If patients are seen late the mortality is much higher; therefore, operating early is very important. We hear men talk of waiting for shock to disappear. As a rule I have seen very few cases of abdominal injury in which it was necessary to wait for shock to disappear. If necessary to make a differentiation between shock and hemorrhage as the cause of the symptoms, we do not know which it is. So it is advisable to enter the abdomen as soon as possible. The operation should of course be rapid and the damage should be repaired as thoroughly as possible, but the policy of not trying to do too much is to be approved. In cases of injury of the bowel requiring anastomosis I do not put in a tube as recommended by Dr. Twohig, but in intestinal obstruction I do this where the patient has accumulated a good deal in the bowel, and there the tube is needed, but in the other cases I think it is not needed.

The entire treatment rests on two factors: first, early probable diagnosis. I think the surgeon is justified in exploring and finding nothing, rather than to wait twenty hours and then go in and find something. Second, we should operate as early as possible and do as little as possible.

DR. CLARENCE C. DEL MARCELLE (Neenah, Wisconsin): We had quite an experience in the Army with abdominal injuries. We got these cases 12 to 14 hours after the injury, when we went in and stopped



bleeding and put in a drainage-tube. We then waited and went in the second time for the purpose of doing whatever was necessary. That was particularly true in those cases in which the bowel had to be resected. We never resected any of them

early. After we began the practice of stopping bleeding and then letting the case get warm and recover from shock before doing anything more, we saved about 10 per cent of the patients, where previously we did not save any.

## THE TUBERCULOUS URETER AND ITS TREATMENT\*

BY GEORGE N. PRATT, M.D., F.A.C.S.

NEENAH, WISCONSIN

A few years ago it was the custom of the great operators to excise all tuberculous ureters. Now we are advised by these same men to leave the ureter, except in cases of extreme infection, and treat it, *in situ*, by one of several methods. This point is well illustrated by a quotation from a letter I received some time ago from one whose surgical judgment is of the best. He says: "A few years ago I heard one of the world's great surgeons say, 'The man who removes a tuberculous kidney but leaves the ureter, writes himself an ignoramus.' " In a recent article the same man stated that he seldom removes the ureter any more, as he finds that nephrectomy and injection of a few drops of pure carbolic acid into the ureter is all that is necessary. What is the reason for this decided change in opinion and practice? I think the answer lies in the fact that the removal of the ureter was practiced in the extreme, often when not necessary. The technic of removal was such as to add greatly to the extent of operation and consequent resulting shock in patients already depleted in strength and of poor resistance, thereby increasing the mortality, as compared to a simple nephrectomy. The ureter was not entirely removed, leaving a stump of more or less length, capable of keeping up the infection, or if a complete excision was practiced, it was done by removing a part of the bladder and so increasing greatly all the unfavorable factors of the operation.

I cannot see why the tuberculous ureter should not be awarded the same treatment that we give to similar infection in all other parts of the body, and I do not believe it is logical that it should not. We hear frequently of the ureter, after removal of the tuberculous kidney, being compared to a joint, and are told that the ureter is then put at rest, as is done with a tuberculous joint with such good results. The comparison is most inaccurate and misleading because of the wide difference between the synovial mem-

brane of the former and the mucous membrane of the latter. The former does not functionate, that is, secrete, unless called upon to do so by the need of its lubrication in the movement of the joint, as evidenced by the formation of adhesions in healthy joints which are immobilized for any length of time. A mucous membrane continues to functionate, that is, secrete, under all circumstances unless entirely destroyed, as evidenced by the impossibility of producing adhesions between two mucous surfaces, even if immobilized and held in apposition indefinitely.

Consequently it is impossible that the ureter be put at rest, except as a conveyer of urine, unless its mucous lining has been entirely destroyed by the infection,—a very unlikely possibility,—in which case the infection would have invaded the deeper layers, and there would be either a fistulous opening into the bladder along the line of the lumen of the ureter or circumscribed abscesses along the ureter with intervals of occluded lumen between (which I have seen in two instances) either of which conditions would call for excision. Of course the various substances which are injected into the ureter (pure carbolic, Beck's paste, iodoform emulsion, etc.) are used with the idea of destroying the mucous membrane or the infection, or both. Of these carbolic acid is much the most commonly used, and with this it seems probable that by its mixture with mucus, urine, and debris in the ureter, its cauterizing and germicidal properties are destroyed long before it reaches the bladder if it ever does reach there. This would seem to be corroborated by the fact that, upon removal of the ureter so injected, one frequently sees the kidney end for an inch or two occluded and the lumen obliterated, but the balance patulous. The same holds true largely for the other substances, with the added objection that the injection of a substance as heavy as Beck's paste into the bladder, if it goes that far, and it must to accomplish the purpose for which it is used, is of

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questionable wisdom. Until a few years ago it had been my custom, in such cases of tuberculosis of the kidney as came under my care, to follow the usual procedure and remove the kidney, inject the ureter and leave it; but during this time I have had occasion in seven cases to remove the ureter, which had been left from a previous operation of excision for tuberculous kidney, because the distressing bladder symptoms had either not improved or grown worse over a period of from one to three years since the nephrectomy. Three of these were my own cases and four were those in which the primary operation had been performed by others. Of these cases there had been prompt amelioration of the bladder symptoms going on to cure in four; two improved greatly, but the other kidney having become infected the bladder symptoms returned and they of course died. I have always felt that had the ureter been removed at the time of the primary operation, or even after a reasonable time subsequently, the patients' lives might have been saved (these were cases in which the condition had existed for a period of two and one-half and three years since the primary operation). One died following operation from an acute dilatation of the stomach.

I do not mean to advocate the removal of the ureter in every case of kidney tuberculosis, and I appreciate that it is extremely difficult and often impossible to know how much involvement of the ureter there may be. However there are very few of these cases which cannot stand an added fifteen or twenty minutes operative procedure, particularly as it permits the closure without drainage of the wound and consequently frees the patient from the subsequent discomfort of a discharging loin wound with its dressings, infection, and subsequent nervous and systemic wear and tear. I would prefer to err on the side of safety and real conservatism, and in all questionable cases, and in all of long standing with any considerable degree of bladder involvement, remove the ureter entirely. Also, I believe it advisable in all cases of extensive bladder involvement, as shown by cystoscopic examination—a contracted bladder holding only two to four ounces of injected water without discomfort; where urine is voided every two to three hours during the twenty-four hours—to provide for bladder drainage, preferably through the vagina in the female and suprapubically in the male. This keeps the bladder more entirely empty and at rest, as is the need in these cases, and relieves the patient during convalescence of the nervous strain caused by a more or less constant bladder

irritation and frequent desire to urinate. Many of these bladder infections are so deep-seated that their recovery is tediously slow or even impossible without rest and drainage, and there is the ever-present possibility of an ascending infection of the other kidney, the opinion of many authorities to the contrary notwithstanding, or through the blood from a constantly active focus in a very vascular situation. In those rare cases where the patient's condition warrants only such operative procedure as is absolutely imperative at the time—these are very apt to be cases of long standing with extensive ureteral involvement—it would seem much wiser to fix the amputated end of the ureter in the wound where it can be treated locally, rather than submit the patient to the continued effects of the infection, though in lesser degree, for which the kidney is removed, as must be true when the infected ureter is left in situ. I am conscious that this is contrary to all accepted ideas, though why I do not know.

I cannot see why a patient should be condemned to recover unaided, as is so often done, from tuberculosis of the ureter when we are so ready to use active measures to overcome like infections in almost all other localities. Certainly a tuberculous focus sufficient to cause the disturbance that these tuberculous ureters so often do over a period of years must be a menace to the patient. A large percentage of these patients die after a number of years of tuberculosis of the remaining kidney, which as far as it was possible to learn was not infected at the time of the operation. It must be true that the longer an active focus is permitted to remain, the greater the chances of this happening.

It seems to me illogical to remove a kidney because it is affected with tuberculosis and to leave a ureter similarly affected and carrying with it similar dangers, though of lesser degree, and that, if the two or three years so often necessary for a patient to recover from the distressing bladder symptoms can be materially lessened by removing the infected ureter by a simple, short, and safe operation, it should be done.

In those cases where it seems wisest to leave the ureter but in which the local signs, that is, bladder conditions, do not improve in a reasonable time (a year) it would seem that the best judgment would indicate its removal both because it has not improved and upon much the same principle that we advise the removal of an appendix which has caused trouble though it is not acute, its removal is much less danger-



ous than are the possibilities if it is left. The removal of the ureter is but little, if any, more difficult or dangerous than the removal of the appendix.

The technic is simple. After removal of the kidney, the technic as described by Lilienthal (*Annals of Surgery*, April, 1911) is followed, in which the stump of the ureter is cauterized with 95 per cent phenol and a moderate-sized flexible urethral bougie with an olive point passed down toward bladder as far as possible. A ligature is tied tightly around the instrument and the bougie so as to hold the latter in place and to prevent leakage from the canal. The greater part of the lumbar wound is closed in the usual manner and the patient turned on his back. An oblique incision two or three inches long is made about an inch to the median side of the anterior superior spine. This is carried down to the peritoneum, from which point the gloved finger can usually work its way extraperitoneally to the ureter, which is easily recognized with the instrument within its lumen (of course it is to be remembered that the ureter is lifted up with the peritoneum), the ureter is easily separated and drawn up to the wound. The bougie is removed from the loin wound and the ligature tightened. The ureter is then drawn out by gentle traction (this is easily accomplished) through the inguinal wound, and from here it is easily followed down to the bladder. At this point my technic varies a little, as Lilienthal cuts the ureter, disinfects the mucosa of the stump, and ligates, while it has been my practice completely to destroy the mucosa of the stump by actual cautery, using a loop about the size of the lead in a pencil, and then ligating the stump which should be made as short as possible. This latter part of the operation is facilitated by elevating the foot of the table and using deep retraction. This wound is closed in layers with small rubber tissue drainage, as tube drainage in this locality is dangerous.

#### DISCUSSION

DR. GEORGE F. THOMPSON (Chicago, Illinois): In the treatment of tuberculosis of the ureter and the kidney, it has generally been my practice to follow the old method; that is, simply removing the kidney and

as much of the ureter as possible, ligating it and then cauterizing it either with the actual cautery or, more frequently, with carbolic acid. One of the things that I have always told the patient on whom such an operation was to be performed, was that very likely in the course of about two or three weeks after leaving the hospital he would be compelled to come back to the office to have an abscess opened. I believe that secondary abscesses are prone to occur, therefore I always warn the patient in regard to it, the same as after operation for varicocele or hydrocele I tell the patient that he will have a lump, but that it is merely a secondary abscess, in that way rather forestalling an occurrence which is frequent. However, twice I have had occasion to remove the ureter completely because of tuberculosis of the kidney—one not very long ago, in which there was a very marked involvement of the ureter with multiple abscesses and calculi near the bladder, which was the factor that induced me to perform a radical operation. I found it not so difficult except as to locating the ureter. We did not use the procedure recommended by Lilienthal, but merely prolonged the incision, simply carrying the lumbar incision around almost to the symphysis and thus dissected out the ureter very satisfactorily.

The other case was also one in which there was a stone in the lower end of the ureter. The ureter did not look so bad, but there was a tuberculous calcification, and in that case the same procedure was followed.

Other than in those two instances I have simply located the ureter, cauterized it, and removed the stump, and my experience has been the same as that of Dr. Pratt; I have never had to do a secondary operation for removal of the stump of the ureter. The theory on which the stump is left is the same as that on which we work when we remove a tuberculous kidney. We all know that after a tuberculous kidney is removed the tuberculous process in the bladder frequently subsides and is eventually cured. There are marked exceptions to that rule in which secondary treatment of ulcer of the bladder is needed, but in the majority of those cases I think that by the routine use of iodoform emulsion in olive oil, injected daily or every other day, a great many cures of tuberculosis of the bladder are brought about. Dr. Hartmann has seen many of these cases, and a majority of them have made remarkable recoveries by the use of iodoform emulsion. One of our office associates has a big string of cases of that type coming in, and his results are very remarkable, simply from treatment with this emulsion. He sometimes varies the routine by using argyrol instead of the emulsion. In the case of a large ureter involved by this condition, and especially where there are calculi at the lower end of the ureter, radical operation on the ureter is to be highly recommended.

## PROCEEDINGS OF THE MINNEAPOLIS CLINICAL CLUB

Meeting of December 16, 1926

The regular monthly meeting of the Minneapolis Clinical Club was held at the Elks Club on Thursday evening, December 16, 1926. Dinner was served at 6 P. M. and the meeting was called to order by the President, Dr. R. C. Webb, at 7 P. M. There were 24 members present.

The minutes of the October and November meetings were read and approved.

Dr. S. R. Maxeiner reported the following case of pernicious anemia treated with mercurochrome intravenously:

Mr. J. R. N. was seen in consultation with Dr. N. P. Bentley, of St. Paul, at the New Asbury Hospital, Minneapolis. The patient is a male, 72 years of age, married, owner and operator of a family hotel. His family history is negative, and his previous history has no bearing upon his present complaint.

The patient's chief complaints were weakness, nausea, and looseness of the bowels, which have been getting progressively worse. He has never been seriously ill and has had no operations. During the past seven or eight months he has had distress in the upper abdomen, with a slight icteric tinge, leading to a diagnosis of cholecystitis for which he was treated. The patient was recently examined, and a diagnosis of pernicious anemia was made by Dr. Bentley, which has been confirmed by two different pathological laboratories. The patient had lost sixty pounds in weight, his hemoglobin was 29 per cent, red blood cells 1,320,000, and white cells 5,000 to 6,000.

At Asbury Hospital he was given a complete study. His Wassermann was negative. Gastrointestinal x-rays were negative. The stools were negative for parasites and ova. There was no blood in the stomach. There was complete achlorhydria. He was given four transfusions of whole blood, and twenty-four hours after the transfusion of 700 c.c. his hemoglobin went up to 41 per cent. However, he failed rapidly, lost his appetite, and vomited constantly. His hemoglobin dropped back to 28 per cent.

In view of his progressive failure in spite of transfusions, and having become entirely bedfast, we decided to use mercurochrome as suggested by Dr. P. B. McLaughlin. He was given an initial dose of 20 c.c. of a 1 per cent solution intravenously. The urine and stools became bright red, he had a severe diarrhea and a severe chill four hours after the injection, together with red emeses.

He has been given nine other injections of mercurochrome, ranging from 20 c.c. to 35 c.c. of a 1 per cent solution, at intervals of three to seven days. After the second dose, that is three days after the first dose of mercurochrome, he was much improved. He developed a ravenous appetite and retained all food. He rapidly gained in strength, and there developed an apparently complete remission of his disease. He has gained 50 pounds in weight. At the present time his hemoglobin is 50 per cent, and he is walking two or three miles daily even in sub-

zero weather. The patient states that he feels better at the present time than he has during the past several years.

The literature on the use of mercurochrome in pernicious anemia is extremely meager, but the investigations of Dr. McLaughlin led him to believe that the beneficial effect is the result of an antiseptic action of the mercurochrome on the intestinal bacteria. The urine and stools are turned red, and Dr. McLaughlin states that mucosa of the bowel is stained red in experimental subjects.

Although I realize that one case is no basis for any definite conclusion, at the same time I have reported it in hopes that it may help to determine the usefulness of mercurochrome in pernicious anemia.

Dr. J. S. McCartney gave a paper entitled "Pulmonary Embolism: a report of 73 cases," which was illustrated with numerous lantern slides and charts.\*

Dr. E. D. Anderson read a paper entitled "Zinc Stearate Aspiration in Children."

## DISCUSSION

DR. KENNETH PHELPS: Dr. Anderson states that the quantity of the powder which gets into the bronchial tree probably determines the outcome of the case. If this powder were opaque we could take a plate and tell how much powder gets into the lung. In one case that I saw we took a plate, but the powder did not show.

In regard to the mechanical and toxic action, we can put other powders, like bismuth, into the lung with no difficulty at all. The effect of bismuth powder does not amount to anything. Lipiodol is being tried with no difficulty attending its use. It seems to me the toxic element is greater than the mechanical. I am wondering if it would not be possible to extract this powder through the bronchoscope. In a severe case, it seems to me, perhaps the trial would be justified.

DR. MAXEINER: I think this is an important matter. Would it be out of order for this Society to go on record as opposing the use of zinc stearate as a dusting powder, and send notice of the Society's action to the Health Commissioner.

DR. ANDERSON: I think it would be a fine thing. The Committee of the A.M.A. were opposed to the use of this powder.

DR. MAXEINER: I move, therefore, Mr. President, that this Clinical Club go on record as endorsing the proposal of the Committee of the A.M.A. opposing the use of zinc stearate as a dusting powder and that we send a record of this action to the Health

\*To be published in Arch. of Path. & Lab. Medicine.



Commissioner and ask that he take any necessary steps to warn the public. (Motion seconded and carried.)

DR. ANDERSON: Answering Dr. Phelps, I would say that such a procedure has been considered, but I have never found any record of its having been used. It would have to be done very soon, because the powder becomes pretty firmly imbedded. It had in the case I reported. You get a tremendous amount of exudate. If not done early, you would have trouble in sucking it out.

DR. MCCARTNEY: What do these children show post-mortem?

DR. ANDERSON: Just a diffuse pneumonia.

DR. BULKLEY: What is the advantage of zinc stearate?

DR. ANDERSON: It is supposed to absorb moisture quickly, but there is no particular reason why it should be used, for other powders are as good.

DR. PHELPS: Is there any record of any other kind of powder causing this condition?

DR. ANDERSON: No, not that I know of.

DR. CAMP: Are there any reports of cases in adults?

DR. ANDERSON: The first notice of zinc stearate poisoning was several years ago in a worker in a factory where this powder was made.

DR. BULKLEY: Is there any record of a blood count on these cases?

DR. ANDERSON: Only two, and they were normal.

DONALD MCCARTHY, M.D.  
Secretary

## BOOK NOTICES

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles. Edited by Henry W. Cattell, A.M., M.D., and Others. Volume IV. Thirty-sixth Series, 1926. Philadelphia and London. J. B. Lippincott Company, 1926.

This book contains a mass of information on various subjects from infant feeding to cancer of the rectum. This information is the most recent work of the leading authorities of the United States and Europe and a large part of it cannot be obtained in any other text book. Its editor, Dr. Henry W. Cattell, has taken the greatest pains to exclude all uninteresting material and his own report of the 1926 Cleveland meeting is an education in itself.

—WILLIAM W. MOIR

THE MODERN TREATMENT OF HEMORRHOIDS. By Joseph Franklin Montague, M.D., F.A.C.S., of the Rectal Clinic, University and Bellevue Hospital Medical College; Lecturer of Rectal Pathology; Fellow, American Proctologic Society, New York Academy of Medicine, and New York Pathological Society. Philadelphia and London: J. B. Lippincott Company, 1926.

This is one of the most interesting presentations of this condition which it has been the pleasure of the reviewer to read. Doctor Montague has offered many interesting contributions to this subject and in addition has carefully collected the essential material from the writings of other authors. All methods of treatment are presented in a fair and impartial manner with recommendations as to those considered best by the author. It seems that in this volume is contained almost all of our present knowledge of this subject. The book is a valuable addition to the library of either the specialist or the general practitioner. Dr. Montague is to be congratulated upon his clear and full presentation of this subject.

—W. A. FANSLER, M.D.

THE MEDICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume X, Number III, (Mayo Clinic Number, November 1926.) Octavo of 275 pages with 55 illustrations. Per Clinic year, July 1926 to May 1927. Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company.

This book gives a clear and concise report of various clinics over the United States and with its drawings of various diseased conditions gives a better understanding of the subject than one can often obtain by actually being present at the clinic. It is a valuable book.

# THE JOURNAL-LANCET

Represents the Medical Profession of  
Minnesota, North Dakota, South Dakota and Montana  
The Official Journal of the  
North Dakota and South Dakota State Medical Associations  
The Hennepin County Medical Society  
The Soo Railway Surgical Association  
and The Sioux Valley Medical Association

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APRIL 15, 1927

## HOW MUCH IS YOUR CASH INCOME?

The editor feels called upon to discuss a more or less painful subject. It relates to the condition of your cash receipts during the year following 1921, and it also is called to mind by a recent article in the newspaper in which a celebrated author in Indiana bemoaned the fact that Babe Ruth was going to draw down a salary of more than \$200,000 in three years, and incidentally he referred to the amount of money paid to a baseball player, saying that the amount would practically take care of all the great literary writers for the rest of their lives. This hardly seems to be a just criticism of the Babe's salary. He is evidently an extremely valuable man, a go-getter, and one who attracts large crowds and a large amount of money into baseballdom.

The other article was in a recent issue of *Scribner's Magazine*, entitled, "Must We send Our Doctors to the Almshouse?" And this article, although a short one, contains many important points. It speaks particularly of the public misconception of what a medical practitioner may do and of his highly expensive vocation. The average doctor must live in a respectable house, must keep up a respectable appearance, he probably needs an automobile, and he has an attractive office, all of which means a good deal of money. The average tradesman thinks a doctor

is making all kinds of money, and he charges him accordingly.

Then, too, the general public knows very little about what the doctor does in the way of public and charitable work. He is on the staff of one or more hospitals, and the public thinks that the city, or county, or state pays him a large salary. As a matter of fact, he receives no remuneration whatever, and yet he spends hours of the day or night either seeing medical cases or operating on surgical cases, taking care of the sick poor, or he gives his time to the dispensary seeing a great many people, but neither the county, the state, nor the city pays him any wage. He does it because he is trying to do good to others and incidentally to get experience which is a necessary part of every doctor's education. All this time he is trying to build up a practice which will keep him out of debt, and not infrequently he fails in this regard. His experiences are continuous, his charity patients are numerous even though his office seems filled with those who are able to pay. And, too, he treats a good many patients in the hospitals and dispensaries that ought not to be treated there at all. They are able to pay moderately, but they assume that the state, the county, or the city owes them free medical services. While he is waiting, either a bondman or a salesman of some kind strolls into his office and takes a good deal of his time. To each of them he is obliged to decline the golden opportunities that are offered him. His expenses are going on all the time; it becomes a habit. As the article says, some doctors inherit money, others marry it, but the average doctor borrows it during the first five years of his practice.

Many amusing things can be told of incidents that occurred in the 4,000 dispensaries of the United States during the year 1922, and during one year no less than 8,000,000 patients were treated and they would be practically worth \$59,000,000. None of these large sums, or even a small part of them, gets into the doctor's hands. This shows the fact that reasonably well-to-do people impose upon our dispensaries and hospitals. Many patients come to clinics in fur coats and other finery. Some of them drive up in taxicabs, and the parking places around the dispensaries are almost entirely occupied by waiting automobiles. Some teaching physician who was demonstrating a case of bronchitis for a group of students remarked that the man's condition would be clearly benefited by such a climate as Southern California. Four months later the man reappeared at the clinic, looking



the picture of health, and much to the amusement of the doctor he told him that he had just come back from a delightful vacation in Santa Barbara. He proved to be a prosperous wholesale silk merchant. One of the morals introduced just at this point is to find out as much as possible about the patients: their financial standing, their rating and the amount of money they can control. These people who deceive the clinic or the hospital fail to realize that they are perpetrating a fraud on the doctor, and they excuse themselves by thinking that the physician receives sums of money for his work.

The doctor at last gets into the habit of buying things on the installment plan just as thousands and thousands of others do, and, like so many others, he may be unable to meet some of his payments for the simple reason that the average physician collects approximately 60 per cent of what he earns; the other 40 per cent just fills up his account book. People do not seem to understand that the doctor's services are given freely to the poor, and it goes without saying that as a rule the doctor is not a very good business man. According to a statistical statement, the average income of American doctors was \$1,200 during 1919, and that probably holds true to-day. Of course many men make money in the practice of medicine, but most of them spend what they make in trying to be comfortable or to enjoy some of this life's rewards.

A reasonable estimate of the number of doctors in the United States is 150,000. This round number has been about the same for several years. The number of practitioners of other schools of the healing art cannot be estimated, but there are doubtless fewer than there are doctors, and it is quite likely that some of them take away patients from the medical profession. But the people seem to like it; they like to go to a charlatan who promises everything and gives but little in return. They would much rather be encouraged and told that they are going to get well under a special form of treatment than to follow the doctor's advice. But that is what the doctor gives largely. He is giving less medicine; he is advising people how to care for themselves, telling them what to eat, what things to avoid, what "revelry" may mean and the consequences thereof, while the other man who has a smattering knowledge of things permits his clients to do pretty much as they please.

A body of medical men met not long ago in a northern city, and they happened to be most of them graduates in the same class of a medical school, and they talked among themselves as

doctors will, when suddenly the oldest man said: "Let's throw our cards down on the table and tell what has happened to our incomes since 1921." After a shuffling of the cards was honestly made, they all admitted their incomes had dropped 50 per cent.

Of course there are more reasons than one for the decline of the doctor's income. First, we think that financial conditions all over the country have prompted many people to dispense with a doctor's services, and many of them think they know how to take care of themselves without advice, and doubtless they realize that many illnesses are temporary and will take care of themselves, which may be true, but these individuals are taking a chance. Then, as has been said before, many people accept advice from anyone, and they often follow the newspaper articles on how to keep well, with what results the Lord only knows.

What is to be done to improve the doctor's condition and keep him out of the poorhouse? Adopt better business methods, see that your patients appreciate your services, keep your book accounts in better order, send out your bills regularly, and sometimes insist upon their being paid even though they have to go through the hands of the collector. The writer heard of a man in a western city who had been in practice a number of years in the east. He built up a large practice, but saved nothing and actually kept in debt. He abandoned his large practice, moved to a western city, and built up another large practice. He needed an associate, and he took into partnership a physician who was also a business man. They joined forces, and in after years they owned almost the entire center of the city and were worth over thirty million. Can you conceive of it?

## RESEARCH

The word "research" has been used very freely in regard to its educational value and there has been more or less revolt against the research worker in certain activities. That is, the claim is made that the worker is doing this for his own benefit, is attempting alone to work out some problem in which he is specifically interested and which often turns out to be of no special value to the medical, or any other body of men, in order to keep his name before the public as a research worker. The general understanding of the word "research", in any form either chemical, physiological or psychological, is that it should benefit the many rather than one or

the few. It is regarded as an educational problem and should so be treated. It really trains the mind, it trains the profession and it makes people think and it makes, perhaps, better problems in behavior. At all events, its scheme should be a broad one and it should endeavor to accumulate as much knowledge as is possible to benefit the greater number of people.

Just at the present time the educational methods throughout the country are being subjected to very severe criticism and analysis, both destructive and constructive. Particularly this applies to the younger pupils, to the younger educators, and no doubt many of the old methods of education have been as severely handled by analytic methods as one could expect. There is no question about the fact either that the younger generation are pushing themselves forward. They are going to take over, perhaps before they are fully fledged, the work of the older members of the various professions because they either feel the urge or because they have an upper hand. It is certainly true that many of the older workers are falling by the wayside from one cause or another; that is, they are considered antiquated when perhaps they are in their full prime, while the younger man feels he is entitled to whatever credits he may get from the older man, but he endeavors to create new situations himself. Perhaps this is in line more or less with the jazz music that has been invading the country. This is one of the scourges we have to endure for the time being and it is well known that our theaters, where music is an element, at least more or less reflect the state of mind of the young and inexperienced pusher.

Fortunately, there is going on in some parts of the world the distribution of funds, public and private, that are being used for real scientific research work. It takes longer, of course, to become a doctor than it used to and yet from a broad viewpoint our ways of thinking are mixed; that is, we have attempted to adopt a more scientific terminology but it has resulted in the basic, mystical attitude toward medicine.

Prof. A. J. Carlson of the University of Chicago, has recently written a very interesting paper on "Research as a Method of Education" and it is published in the February 4th number of "Science." He says that the "educated" man is supposed to have a certain fund of information plus a certain controlled behavior or disciplined emotions. He is obliged to weigh evidence and to keep an open mind in regard to the unknown; and he thinks that the scientific methods have not yet become a tool in everyday human

behavior and that the present-day educational methods appear to be designed to impart the maximum of information in the minimum of time. This is wasteful and leads many inexperienced youths into devious paths of error which have been explored and rejected by the adult and so-called educated generation. The rate of increase of facts and theories is so great that if we expect even the ablest of our students to master them all, or even a considerable fraction of them, before he is admitted to the practice of his profession, whether it be engineering, chemistry or medicine, he will have neither time nor energy to practice science.

The result is that a good many of the old timers, as they are called by the youth of today, stick to old principles and Dr. C. G. Cumston, who has written a history of medicine from 1700 B. C. to the present day and which contains some very interesting information, incidentally tells of what they did in the olden times. For instance, he quotes from Dr. Cruikshank, who has said "a dose of castor oil acts with equal efficiency whether given to expel a demon, to calm the vital spirits, to assuage the archeus, to evacuate morbid humors, to eliminate toxins, to restore endocrine balance, or to reduce blood pressure," a very simple remedy commonly used which often relieves people of many of their discomforts. The writer remembers a time when an old servant, who was employed in the family, used to have fits of depression and irritability and grouchiness and the mistress of the house used to give her a dose of calomel. The next day the atmosphere in the kitchen and dining room was serene and everybody was happy.

Dr. Cumston writes that "the intelligent and cultured seem to be just as credulous in their search for health as their more ignorant brethren. Witness the prosperity of faith healers, chiropractors and their like. It was the famous Bishop Berkeley who published 'A Chain of Philosophical Reflections and Inquiries Concerning the Virtues of Tar Water,' a fluid prepared by stirring a gallon of water with a quart of tar, leaving it forty-eight hours, and pouring off the clear water. The great philosopher believed that this specific cured a great variety of diseases." The author says also, that Susrata, the Hindu physician, who flourished at about the beginning of the Christian era, said: "He who is only versed in books will be both discomfited and cowardly when he finds himself in the presence of a patient, and he who rashly embarks upon the practice of medicine, without first having



studied the books of science, must not expect the respect of humanity, but rather merits punishment by the King; but he who combines the reading of books with experience can with surety undertake the treatment of disease." Perhaps on the whole our ideas about things have not changed very much since the beginning of the development of Christianity.

This book further quotes: "With Hippocrates (460 B. C.) we are on more familiar ground, and many of the sayings of Hippocrates are still the texts of today. Men are beginning to believe that the bodily constitution, the manner in which the body reacts to noxious influences, plays a determining factor in illness, and thus are returning to the views of Hippocrates of over two thousand years ago. Unfortunately, the art of healing cannot await the full fruition of the scientific method as applied to medicine. The individual sick needs immediate relief and must be treated to the best of our present knowledge. But the wise physician and layman, and this applies to the people at large, if they had a knowledge of the vagaries of medical theories such as may be obtained from a reading of Dr. Cumston's book will adhere to a healthy empiricism and skepticism. The physician may escape a narrow dogmatism; the patient, if he is lucky, may escape the clutches of the many cultists who are waxing fat on the ignorance and credulity of society."

#### ARTICLES ON TUBERCULOSIS EXPAND INTO BOOK FORM

During the past year THE JOURNAL-LANCET has published a considerable number of notable articles on tuberculosis, including a series of papers by Dr. J. Arthur Myers, of Minneapolis on the "Modern Aspect of the Diagnosis and Treatment of Tuberculosis." Dr. Myers is Associate Professor of Preventive Medicine in the University of Minnesota and Medical Director of the Lymanhurst School and Hospital for Tuberculous Children. As Lymanhurst is the only open-air public school in this country for the care and treatment of tuberculous children, with a large staff of volunteer tuberculosis experts, these articles have attracted wide attention and, we believe, have disseminated much valuable information.

Dr. Myers' papers have been greatly elaborated and profusely illustrated, and are to be published in book form by the Williams and Wilkins Company, of Baltimore, Md. The book will be entitled "Diagnosis, Classification and Treat-

ment of Tuberculosis", and will be off the press next month.

In order to round out the series of articles now appearing in our columns by Dr. Myers, he will contribute two or three more papers to the series to appear soon.

#### THE COMING WASHINGTON MEETING OF THE A. M. A.

We are looking forward with a great amount of pleasure for the Washington meeting which is called for the week of May 16-20. The Board of Trustees will meet on May 15 at the Mayflower Hotel, and the following day the House of Delegates will hold its first session. If one has been a spectator at any of these meetings he has been amazed at the amount of work accomplished, as well as the scope and breadth of the work. This meeting usually occupies practically all the first day.

On the following day, May 17, the sections begin their work, although during the meeting of the House of Delegates there are many allied sections which hold meetings elsewhere, details of which meetings will be published soon in the *Journal of the American Medical Association*. Of course, all the local committees on arrangements and the A. M. A. committees with their advisory Council, have worked hard, and are still at it, to provide all obtainable facilities for the comfort and convenience of all who attend. Entertainment has been provided that will be long remembered.

The probabilities are that the attendance will be large, as Washington is a delightful city in the middle of May. All who are going to Washington should write at once for hotel reservations.

In order to obtain the benefit of reduced rates (one and one-half fare) rate certificates must be secured from agents when tickets to Washington are secured. These certificates must be stamped by the Secretary of the A. M. A. and validated by an agent of the railway company before return tickets at one and one-half fare can be secured. It is quite necessary to observe these details because in the omission of any one of them much trouble results for the attending member.

On Thursday, May 19, many of the members and the House of Delegates are looking forward to a busy time, for among the duties which the House of Delegates will take up are:

1. Supplementary Report of Committee on Credentials.
2. Roll-call.

3. Reading and adoption of minutes.
4. Supplementary report of the Board of Trustees, Councils, and Committees.
5. Election of officers.
6. Nomination of Standing Committees.
7. Election of Honorary, Affiliate, and Associate Fellows.
8. Selection of place and fixing the time for the next annual session.
9. Unfinished business.
10. Adjournment.

In this order of business the feature that Minnesota in particular is interested in is the selection of place of meeting and fixing the time of the next annual session. Minnesota has been hard at work and is anxious to entertain the A. M. A., and with our present facilities for a meeting-place, hotel accommodations, and general hospitality, particularly at the time of year when Minnesota is in bloom and in blossom, we feel that we shall have many attractions to offer. We feel confident that the members of the Association will have a good time in the Middle West.

Nothing has been said about the program because it has not yet been published, and nothing can be said until our next issue. By that time you will have received your copy of the *Journal of the American Medical Association* giving full information of the program.

Among the numerous entertainments offered by the Washington committee is that of the Washington Gun Club. They extend all an invitation to be guests of the Club and take part in a tournament to be held May 16. Suitable prizes will be awarded. Another entertainment is the opportunity to play golf on the Chevy Chase and other golf grounds in and about Washington. It is quite possible that many of the members of the Association will be playing golf when they should be present at some of the Section work.

## MISCELLANY

### A TRIBUTE TO ALEXANDER HAMILTON BARBER

Dr. Alexander Hamilton Barber died March 9, 1927, at Minneapolis, of heart disease, aged 83. A Civil War veteran; member of Company C, 2nd Wisconsin, until wounded at Antietam; received degree of M.D. from the College of Physicians and Surgeons, New York (Columbia) about 1869; practiced thirty years at Lancaster, Wisconsin, and several years more at Waukesha before retirement.

He was one of the finest types of the old family doctor; competent and modest; a friend to all who knew him. He lost his property in his old age, but

it did not spoil him. He was always cheerful and happy. He was my next door neighbor for the last ten years, and I am the better for it. *Requiescat in pace.*

—E. P. LYON,  
Dean of the Medical School

### DIVISION OF ADMINISTRATION AND VITAL STATISTICS OF THE STATE BOARD OF HEALTH OF SOUTH DAKOTA

J. F. D. COOK, M.D., Superintendent

The State Board of Health announces the resignation of Dr. Clara E. Hayes, Director of the Division of Child Hygiene. Her resignation was tendered February 13, 1927, to take effect March 31.

Doctor Hayes came to the State Board of Health February, 1922, and has directed the Child Hygiene Division with the utmost success, gaining the admiration and full co-operation of the physicians of South Dakota, as well as all agencies of the state, in a campaign directing the attention of the laity to the necessity of the conservation of the lives of mothers and infants of the State through hygienic measures and preventive medicine. Doctor Hayes accepts a position with the American Child Health Association and goes to New York City to assume duties in the central offices.

It is with regret that I accept the resignation of Doctor Hayes, but I realize that she enters a larger field of endeavor with greater advantages and possibilities. Her professional and executive ability, I am sure, will make her services most valuable to the American Child Health Association.

A quotation from her letter of resignation will show her feeling toward the people of South Dakota: "It takes more courage than any one would guess to give up my work here, for I feel that it is the best that I shall ever find. I have been happier in it than in anything I have ever done, and I love South Dakota and her people."

God speed to you, Doctor Hayes, in your new field.

The State Board of Health announces the appointment of Miss Florence E. Walker, R. N., as Director of the Division of Child Hygiene left vacant by the resignation of Doctor Clara E. Hayes. Miss Walker is a Canadian by birth, but has lived most of her life in Cleveland, Ohio.

She graduated from the Illinois Training School for Nurses in Chicago and did private-duty nursing, school nursing, and industrial nursing in Cleveland, Ohio.

In 1919, after sixteen months in Army Service, she came to South Dakota for the Red Cross Seal Commission and did county work in Marshall County for three months and in Codington County for one and one-half years. She resigned the latter position in 1921. Later she returned to South Dakota and did county nursing work in Jerauld County under the Red Cross for one and one-half years.

In April, 1923, Miss Walker came to the Division of Child Hygiene of the State Board of Health and was the first nurse to work with Doctor Hayes.

In September, 1924, it was necessary for her to return to her home in Ohio. After remaining there a year she returned to Madison, South Dakota, and



did county work for eight months, after which she resumed work with the Division of Child Hygiene and has been teaching prenatal classes since June, 1926.

May Day.—On account of the resignation of Dr. Clara E. Hayes, who takes work with the American Child Health Association of New York City, Dr. J. F. D. Cook, Superintendent of the State Board of Health, has appointed Mr M. C. Haecker, Director of Education and Publicity with the State Board of Health, as May Day Chairman. The co-operation of Mr. Haecker's Division with the Division of Child Hygiene makes it possible for Mr. Haecker to carry on the program as outlined by Doctor Hayes.

## NEWS ITEMS

Dr. H. J. Koaiker has moved from Hills to Albert Lea.

Dr. J. F. Kline, of Anoka, has returned from a trip to Europe.

Dr. F. L. Kling, Milaca, Minn., will reopen his hospital on May 1.

Dr. J. C. Waterman has moved from Burke, S. D., to Caterina, Texas.

Dr. Albert P. O'Leary was elected mayor of Big Timber, Mont., last week.

Dr. E. H. Smith and Dr. O. J. Engstrand, of Bemidji, have dissolved partnership.

Dr. D. M. Clark, a 1926 graduate of the Medical School of the U. of M., has moved from Duluth to Pine City.

The formal opening of the new Veterans' Hospital at Fort Snelling took place last week and was a very elaborate affair.

Both branches of the Minnesota Legislature passed the so-called basic science bill last week, passed the so-called basic science bill last week, and the Governor signed the same.

Dr. T. B. Hughes, in the Government Indian Service at Cloquet, Minn., has been transferred to the same service at Roland, S. D.

In 1926 the Miller Hospital of St. Paul, admitted 3,574 patients, of whom 1,035 were free patients and 1,281 were part-pay patients.

Dr. O. H. Urstad, who formerly practiced in Minneapolis and at Kiester, Minn., died last month in Stanwood, Wash., at the age of 62.

The Coroner of Hennepin County has filed a report that Dr. F. J. Souba, of Minneapolis, died from concussion of the brain caused by a fall.

Dr. R. M. Eppard, of Cloquet, has equipped rooms in a city block to be used for emergency, surgical and obstetrical cases; they are open to all physicians.

St. Paul and Ramsey County are to spend \$250,000 for increased equipment and building to Ancker Hospital to care for the City and County's tuberculosis work.

Dr. Henry D. Diessner, of Minneapolis is going to Vienna for several months' study in skin and genito-urinary diseases. He will return to Minneapolis in the fall.

The death-rate from diphtheria in Minnesota in 1926 was the lowest ever recorded. It was 5.93 for each 100,000 persons. The previous low record was 7.26, the rate in 1922.

The Woman's Club of Cando, N. D., recently gave several pieces of furniture to the Cando City Hospital. They conduct the annual Christmas Seal Sale of this City.

Dr. Wallace Cole, of St. Paul, conducted orthopedic clinics in Fargo and Jamestown, N. D., last month under the auspices of Rotary Clubs of Fargo and Jamestown.

Dr. H. E. Koop, a recent graduate of the Medical School of the U. of M., who took his year of internship work at St. Mary's Hospital of Duluth, has located at Cold Springs.

Dr. H. M. Knudtson has sold his practice at Browerville to Dr. J. A. Hilton, of Rochester. Dr. Knudtson will spend a year in Chicago and locate elsewhere. He will specialize in eye.

Dr. W. J. Mayo, of Rochester, gave the D. C. Balfour Lecture in Surgery at the University of Toronto on April 5. His subject was "The relation of the basic medical sciences to surgery."

Dr. Elvin Charles Stakman, of the University of Minnesota, gave a Mayo Foundation lecture in Rochester on the evening of March 15. His subject was "Racial specialization of pathogenic fungi."

Professor H. H. Whetzel, of Cornell University, gave a Mayo Foundation lecture in Rochester on the evening of April 8. His subject was "The relation of plant pathology to human affairs."

Dr. Robert S. Brown, of Minneapolis, died last week at the age of 63. Dr. Brown was a graduate of Bennett Medical College, class of '95, and had practiced nearly thirty years in Minnesota.

Dr. Walter A. McEachern, of Superior, Wis., died in that city last month at the age of 54. He was a graduate of the University of Illinois, class of '04. He formerly practiced at Sandstone, Minn.

Drs. D. C. Balfour, G. B. Eusterman, H. E. Robertson, A. C. Broders, and W. C. MacCarty were in Minneapolis, March 24, to act on the committees giving final oral examinations for advanced degrees in medical subjects.

Dr. J. W. Andrews, of Mankato, celebrated the fiftieth anniversary of his practice of medicine last month. After spending five years in practice in Marshall, Minn., he moved to Mankato, where he practiced forty-five years. He has retired.

The Madison District Medical Society of South Dakota held its annual meeting at Madison last week. Papers were presented by Drs. C. E. Sherwood, R. S. Westaby, and B. T. Green. The following were elected officers of the Society: President, Dr. E. E. Torwick, Volga; vice-president, Dr. H. E. Kellogg, Madison; secretary-treasurer, Dr. J. R. Westaby, Madison.

Dr. John A. Pratt, Assistant Professor of Ophthalmology and Otolaryngology, of the Medical School of the University of Minnesota, has returned from an extended visit to the Pacific Coast. While there he lectured before the Los Angeles, San Francisco, Portland, and Seattle ophthalmological and otolaryngological societies on "Sinus Diseases and Their Intranasal Surgical Treatment."

At the commencement exercises at the University of Minnesota, March 17, several fellows from The Mayo Foundation received advanced degrees. Drs. V. S. Counsellor and E. F. Henderson received the degree of Master of Science in Surgery, and Dr. E. D. Hauser received the degree of Master of Science in Orthopedic Surgery. The degree of Master of Science in Medicine was conferred on Dr. Frances Ford in absentia.

The nineteenth biennial report of the State Department of Health of North Dakota has been issued and is filled with invaluable statistical information for physicians of North Dakota and for public health men everywhere. It makes available, for the first time in printed form, statistics of the registration of births and deaths in the state. Although handicapped by the lack of adequate funds, the department is doing a highly creditable work.

#### SOUTH DAKOTA NEWS REPORTED

By Dr. J. F. D. Cook, Secretary

The South Dakota State Medical Association will meet at Huron, South Dakota, May 3, 4, and 5, 1927. The first session of the House of Dele-

gates will occur at 8:00 p. m., May 3, where such matters of business as regularly come before the society will be transacted.

On the program for Wednesday, May 4, Dr. J. C. Ohlmacher, Director of Laboratories and Preventive Medicine, University of South Dakota, will present a very interesting study, "Anatomical and Pathological Evidence of Arrest or Cure in Certain Cases of Diabetes Mellitus—A Plea for Early Recognition and Treatment." At 10:00 Dr. F. C. Rodda, Associate Professor of pediatrics, University of Minnesota, will give a pediatric clinic at which time unusual and interesting cases will be shown. Following this clinic he will present the prophylactic and therapeutic treatment for communicable diseases.

In the afternoon we will have an address by the President of the South Dakota State Medical Association, Dr. T. F. Riggs, of Pierre. At 2:30 Dr. F. C. Warnshuis, Grand Rapids, Michigan, Speaker of the House of Delegates of the American Medical Association, will appear on the program. His subject will be announced later. Following this, Dr. John S. Coulter of Chicago will present the very interesting subject "Physiotherapy."

The evening meeting at 8:00 p. m. will be open to the general public at which time Dr. J. M. Dodson, of Chicago, Bureau of Health and Public Instruction, of the American Medical Association and Emeritus professor of Medicine, Rush Medical College, and Dr. Joseph C. Bloodgood, Associate Professor of Clinical Surgery, Johns Hopkins University, Medical Department, Baltimore, are to give health talks.

Thursday, May 5, Dr. Clarence W. Hopkins of Chicago will give an illustrated lecture on "Head Injuries." Dr. David Mayo Berkman, Associate Professor of Medicine, University of Minnesota and Mayo Clinic, will give an illustrated lecture on "Dyspepsia." Dr. Henry L. Ulrich, Associate Professor of Medicine, University of Minnesota, will give a medical clinic.

In the afternoon, Dr. Joseph C. Bloodgood will give an illustrated lecture on "Cancer."

The program committee are to be congratulated in securing these men to appear on our program at this time and surely all the physicians of the State should make extra effort to reserve these dates and plan to attend from start to finish.

The local committee have planned the usual entertainment. At the Rush Alumni luncheon at noon, May 4, they will have as their guest Dr. J. M. Dodson of Chicago. May 4, at 6:00 p. m. a dinner for the visiting guests, physicians, and their wives will be held. At 8:00 p. m. the gen-



eral meeting as stated above. This will be worth the while of all as these men are able to present their subjects to the laity in such a way that they can be understood.

**PROGRAM OF THE SOUTH DAKOTA STATE  
MEDICAL ASSOCIATION—FORTY-FIFTH  
ANNUAL SESSION AT HURON, S. D.**

May 3, 4, and 5, 1927

**Headquarters—Marvin Hughitt Hotel, Elks Hall**

**Tuesday, May 3d**

8:00 P. M.—Meeting of Board of Councillors and House of Delegates.

**Wednesday, May 4th**

9:30 A. M.—J. C. Ohlmacher, M.D., Director State Health Laboratory, Vermilion, S. D.. "Anatomical and Pathological." "Evidence of Arrest or Cure in Certain Cases of Diabetes Mellitus—A Plea for Early Recognition and Treatment."

10:30 A. M.—F. C. Rodda, M.D., Associate Professor of Pediatrics, University of Minnesota. Pediatric Clinic. (W. H. Saxton, M.D., Huron.)

12:00 M.—Luncheons—Alumni Associations.

2:00 P. M.—President's report. T. F. Riggs, M.D., Pierre.

2:30 P. M.—A. L. Severeide, M.D. Peabody Clinic, Webster. "Diagnosis of Stomach and Intestinal Diseases."

3:00 P. M.—F. C. Rodda, M.D., Associate Professor Pediatrics, University of Minnesota. "Prophylactic and Therapeutic Treatment of Communicable Diseases."

3:00 P. M.—John C. Coulter, M.D., Head of the Department of Physiotherapy at Northwestern University, Chicago, Ill. "Physiotherapy."

6:00 P. M.—Banquet—Dutch. Marvin Hughitt Hotel.

8:00 P. M.—Public Meeting, Presbyterian Church. J. M. Dodson, M.D., Dean of Rush Medical School, Chicago, Ill. John C. Bloodgood, M.D., Associate Professor Clinical Surgery, Johns Hopkins University, Baltimore, Md.

**Thursday, May 5th**

9:00 A. M.—C. W. Hopkins, M.D., Chief Surgeon, C. & N. W. Ry. Co., Chicago, Ill. "Head Injuries, Methods of Diagnosis and Treatment." Illustrated by Lantern Slides.

9:45 A. M.—David Mayo Berkman, M.D., Associate Professor of Medicine, University of Minnesota, and Mayo Clinic, Rochester, Minn. "Dyspepsia."

10:30 A. M.—H. L. Ulrich, M.D., Associate Professor of Medicine, University of Minnesota, Minneapolis, Minn. "Medical Clinic." (O. R. Wright, M.D., Huron, S.D.; J. C. Shirley, M.D., Huron, S. D.; B. H. Sprague, M.D., Huron, S. D.)

12:00 M.—Luncheon.

1:30 P. M.—Reports, place of meeting, Introduction of President-elect, by T. F. Riggs, M.D., President.

2:00 P. M.—Joseph C. Bloodgood, M.D., Associate Professor of Clinical Surgery, Johns Hopkins University, Baltimore, Md.

J. F. D. Cook, M.D.  
Secretary

**Call For Meeting of the South Dakota Rush  
Graduates**

To The Rush Alumni of South Dakota, Greetings: We are planning to have a rousing "RUSH" lunch, Wednesday, May 4, 1927 at Huron, S. D. on the first day of the Annual meeting of the South Dakota State Medical Association.

Our Rush Faculty guest will be Dr. John M. Dodson, '82, Prof. Emeritus of Medicine. He will tell us all about the "Old Rush" on the West side and the "New Rush" on the campus of the University of Chicago.

Let every Rush fellow of South Dakota plan to be on hand for this Rush lunch and the State Medical meet at Huron, May 4-5, 1927.

L. N. GROSVENOR, '02.  
Huron, S. D.

**Northwestern District Medical Society of North  
Dakota**

The Northwestern District Medical Society of North Dakota met on March 30 at 5:30 P. M., at St. Joseph's Hospital, Minot. After a hearty dinner the following program was presented: "Toxic Goiter," by Dr. R. H. Ray, of Garrison; a paper on a talk on "Business Methods in the Medical Profession," by Dr. A. D. McCannel, of Minot.

Cases were presented by Dr. Devine and by Dr. Wheelon. The attendance was 24, with several out of town members present in spite of bad roads.

ANDREW SINAMARK, M.D.  
Secretary

**Physician Wants Location**

An experienced physician wants to locate in a farming country; Catholic community preferred. Address 338, care of this office.

**Apparatus for Sale**

Diatherm Wappler Excell Model; new with a very complete line of accessories. Substantial discount. Cash or terms. Address 335, care of this office.

**Minneapolis Office Furniture and Lease for Sale**

I am leaving the city. Office furniture and lease for sale very cheap. Good opening in fine part of city for a young man. Address 337, care of this office.

**Minneapolis Location Offered**

A desirable location for a physician with a dentist is offered over a new drug-store on a busy street car line in Minneapolis. Address 347, care of this office.

**Good Opening for Physician**

This in a South Dakota town in the heart of the corn belt. Nothing to buy. A money maker from the start. Good roads, wealthy farming community. Address 343, care of this office.

**Locum Tenens Wanted**

A physician is wanted to take charge of general practice in eastern South Dakota for four or five months. Rich farming community. I have made good here for the past ten years. Leaving about May first. Address 346, care of this office.

**Technician Wants Position in Community Hospital**

Graduate technician, with three years experience and with two years nurse's training. Willing to assist with the nursing when not busy in laboratory. Best of references. Address 336, care of this office.

**Physician Wanted**

Territory good. Collections good. Practice established. May take over drug-store if desired. Applicant will please give full particulars about himself in first letter. Address Greden & Speltz, Altura, Minn.

**Physician Wanted**

To locate in a city of 600 population in north central South Dakota, in a thriving agricultural community. Twenty miles to the nearest doctor. Office given free of charge. For further information address Secretary, Hosmer Commercial Club, Hosmer, S. Dak.

**Large Minnesota Practice for Sale**

Large obstetrical and general practice in city of 4,000, eighteen miles from Minneapolis. Will introduce and give to my successor a good business from the start. Established eight years. Collections \$60,000.00. Home and office built four years ago, perfectly modern and up to date. Ideal for a doctor. Best location in city. This is a high-grade proposition, and I want to hear from a live man at once. Reason for selling, specializing. Address 332, care of this office.

**Office Space Offered in Minneapolis**

A very desirable office with a firm of established dentists is offered to a physician at low rental. School within one block of office with 2,000 children. Overhead expense small. A Catholic preferred. Address Dentist, 3800 Grand Ave., Minneapolis.

**Physician Wanted**

Eye, Ear, Nose, and Throat. To become associated with a group of physicians in Minneapolis. New clinical building. X-ray and clinical laboratories. Free office expense until established. Also wanted, an associate in General Practice and Surgery on salary. Address 329, care of this office.

**Practice for Sale**

A \$6,000 cash unopposed practice in town of 500 in Northern Minnesota in Park Region district. Large territory, good school, fine roads, churches, hospital facilities near by. Came here 15 months ago in debt; now going to specialize. I dispense my own drugs. Asking \$500 for drugs and office equipment. Address care of this office.

**Physician Wants Good Location**

A recent graduate of the Medical School of the U. of M. who has had one year's interne work in a large private hospital and one year in a large public hospital wants to locate in a live town in the Northwest. Understand the Scandinavian and German languages well enough to carry on his work in these languages. Address 341, care of this office.

## Delayed or Incomplete Convalescence

Hardly any other stage in the course of an acute disease is attended by greater uncertainty than that of convalescence. Too often, patients may fail to gain their full strength and vitality; in other words, they fall just short of reaching that condition of well-being that may be considered complete recovery.

To practitioners, however, who have learned the recuperative value of Guiatonic from its repeated use in conditions of lowered vitality, convalescence causes little concern. They know that this remedy can be relied on to stimulate functional activity throughout the body, and thus help make convalescence *a short, safe and sure step to health.*

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A palatable preparation of special salts of guaiacol and creosote which may be freely given to the weakest patient, without fear of gastric disturbance. *It contains no narcotics.*

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# THE JOURNAL-LANCET

Represents the Medical Profession of  
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**North Dakota and South Dakota State Medical Associations**

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## THE APPEAL OF THE PROBLEM OF DISEASE TO THE BIOMETRICIAN\*

BY J. ARTHUR HARRIS

Department of Botany, University of Minnesota

MINNEAPOLIS, MINNESOTA

Ladies and Gentlemen: We live in an age which is generally described as commercial, which is sometimes characterized as sordid, and in which we at all times find much that is selfish. It is, however, an age in which to most thoughtful individuals *service* is the justification for existence. In speaking to you I realize that I am addressing a group of men and women who, in your present capacities, are actuated by motives of immediate public service. However much disease as a problem in pure science may appeal to some of you in other professional relations, you are here gathered together as members of an organization which is immediately and directly humanitarian in its purpose and administration.

In selecting *The Appeal of the Problem of Disease to the Biometrician* as the subject of my remarks this evening, I shall hope to bring before you for your consideration the possible service to medical science of more adequate statistical or biometric treatment of the problem of disease.

As a first step in this direction, may I stress the complexity of the problem of disease, and of the problem of the service of the medical man to humanity in the combating of disease? It is

essential at the outset to realize clearly that you who are seeking to aid those whose misfortune it has been to become afflicted with one of the most destructive of known pathogenic organisms are dealing with a problem which is as complex in nature as it is enormous in magnitude.

Consider for a moment the basis of this complexity of your problem. These bodies of ours are either the finest handiwork of God, or they are the highest result of a long process of organic evolution. To you as a group of men and women desirous of aiding tuberculous children it is immaterial whether human bodies were in the beginning moulded in the palm of God from clay, as some would like to force us by legislation to teach, or whether they are the most elaborate end result of infinite forces which we eternally seek, but seek in vain, to understand fully. This much is clear, and sufficient for our purposes: The human body in its intricacies of normal structure and function is the most complicated thing which we know, except the human body as invaded by and struggling against the attacks of a disease-producing organism. Add to these complexities the fact that man has only recently emerged from social and economic conditions of life which were relatively simple and has entered into the baffling complexity of life which we call civilization, and you have a picture of the tangle of factors which must be dealt with by those

\*Address given before the Volunteer Faculty of the Lymanhurst School for Tuberculous Children of Minneapolis at their annual meeting at the Curtis Hotel, Minneapolis, December 4, 1926.

who seek to unravel the problems of medical science and to aid man in his battle against disease.

The involved nature of the whole problem, one phase of which you face, is illustrated by the difference in attitude and of immediate working purpose of those who make human disease their task.

The life purpose of the general practitioner must be the performance of his social function of restoring to health and efficiency those who are suffering. The public health officer and the engineer must devote their energies, not to the treatment of specific individuals as such, but to the task of providing such conditions of sanitation and of isolation of sources of infection that the safety of those members of the community who are well will not be jeopardized by the presence of those who are ill.

The pathologist and bacteriologist must work with divided interest. On the one hand, they must be driven by that compelling force which we call the spirit of research. On the other hand, they must be in some measure imbued with the hope of alleviation of human suffering and increase in human accomplishment through the application of the results of their painstaking work in the laboratory. They are inclined to stress research rather than application, realizing as they probably may that it is impossible for one man both to discover and to apply extensively the facts concerning the nature and the cause of disease upon which progress in practical medicine must in the last analysis rest.

The work of the bacteriologist and the pathologist cannot stand alone. They must have as their secure foundation the proved results of not merely the anatomist, the histologist and the physiologist, but of the organic and physical chemist and the physicist, as well. A whole corps of able and scientifically disciplined men must function in diverse, but mutually supplementary, capacities if we are to make progress in the prevention and cure of human ailments.

If I may essentially reiterate, I urge that science in general, and medical science in particular, has grown to such complexity that we are largely at the end of wholly individualistic effort. Further progress in researches of greater difficulty must, in my opinion, depend on specialization in methods and co-operation in problems. This principle has been more highly developed in medical practice than in any other field of activity of which I know. Specialization has now reached such an extreme that the family physician of the older type is becoming alto-

gether too rare in our communities. One specialist may diagnose, another operates. Patients may, indeed, largely circumnavigate the world to come under the hand of a highly skilled specialist. Is it not reasonable to assume that in the field of medical research we should work out the same kind of co-operation that has developed in medical practice?

It is unreasonable to expect me, in the presence of so many able medical men, to speak with authority concerning specific diseases, or particularly concerning tuberculosis. I am a biological statistician, or biometrician, not a medical man. I must, therefore, speak of this special field only.

About a quarter of a century ago there began in biology under the brilliant leadership of Francis Galton, W. F. R. Weldon, and, above all, Karl Pearson, who has carried the brunt of the fight for a new type of biology, a small but intensive development of a special field known as biometry.

The biometrician realizes that some problems can be solved by a critical study of a relatively few cases or by the execution of a few crucial experiments. He has, however, been able to substantiate the correctness of his position that many of the larger problems of biology are so complex that the variables involved can be disentangled and evaluated only by the amassing of large numbers of the data of observation or experimentation and the application to this massed material of more refined methods of mathematical analysis.

Progress in this field has necessitated among other things the development of a new branch of mathematics. In its earlier stages the development of this new phase of mathematics depended primarily upon the efforts of those whose dominating interest lay in the field of biology in its pure and applied phases. It has been only in recent years that mathematicians as such have come to realize the importance of turning their attention to the problems of mathematical statistics. It is interesting to note in these days of controversies concerning the teaching of evolution that much of the earliest work in this field of mathematics grew out of a desire to investigate more quantitatively some of the basic problems of organic evolution. The formulæ which were first developed by biologists for this purpose are now not merely widely used in agricultural, medical, social, and economic research, but are being taken over by astronomers for the study of solar phenomena.

Recognizing the fact that all of the phenomena



of this universe, as we can observe it, are extremely complex and that biological, including agricultural and medical, phenomena are among the most complex of all, the biometrician has sought to devise mathematical methods whereby he may arrive at broad generalizations concerning things which in themselves are so variable that observations on few individuals can lead to no reliable conclusions concerning them.

What service can the biometrician render in the great battle against disease?

At the outset let us recognize the fact that the service of the biometrician must be an indirect rather than a direct one. Through his interpretation of the numerical data of medical observation or experimentation he must attempt to formulate general laws concerning some of the problems of human illness which are too complex to be interpreted by the human mind unaided by the amassed and formulated experience of the mathematician. These may aid the investigator in the field of medical science, who in turn must pass on information to the general practitioner, who, finally, must carry the benefits of medical research to those who need the aid of the physician.

Again, let us recognize the fact that the possibility of service from the biometrician must depend upon his co-operation with those who deal directly with the human body in health or disease, and who in consequence have the opportunity of accumulating large series of observations and measurements. The function of the biometrician is the interpretation of large masses of data. The statistician cannot progress very far without the co-operation of those whose first-hand knowledge of disease sharpens their judgment concerning it.

In emphasizing (and rightly emphasizing) the value of clinical experience and the training of clinical judgment, let us remember that medical history teems with errors originating from the acceptance of the personal judgment of the clinician concerning the interpretation of the results of his experience. The experience of the practitioner naturally leads him to certain beliefs, but in science it should be axiomatic that we cannot make progress if belief be allowed to take place of knowledge. Pearson was right when he wrote: "Valuable as clinical experience is and ever will be to the individual medical man, it is wholly worthless as a scientific argument until it is pooled, reduced to figures, and presented with an adequate statistical treatment."

Our most rapid and certain progress will be realized if the experienced clinician can have the

co-operation of the statistician and if the highly trained statistician can, in turn, have the co-operation of those who have the opportunity of accumulating data and can have their aid in checking by their judgments the results of mathematical analysis.

Let us indicate the possible service of the biometrician in medical science by illustrations of the kind of work which has already been done on the problem of the relative importance of constitution and infection in determining the incidence of such a disease as tuberculosis.

Twenty-five and more years ago Pearson<sup>1</sup> and later Beeton and Pearson<sup>2</sup> carried out a detailed study which seems to me of material significance in relation to the group of problems in which you are interested. They showed by the biometric analysis of records of the duration of life of members of the English peerage and landed gentry and of the Society of Friends that duration of life is inherited. By this the biometrician means that the duration of life of the children is not independent of that of the parents, but that the span of life is on the average measurably longer in the case of the offspring of parents who have outlived the average life of their generation, and measurably shorter in the case of children of parents who have succumbed to the strain and stress of life earlier than the average age at death of their contemporaries. Further, their results showed that the duration of life of brothers and sisters is not independent, but correlated. Belief in the hereditary nature of the duration of life has now become so general that life insurance companies ascertain the ages of death of the relatives of the individual who applies for a policy.

In a subsequent study, Elderton and Pearson<sup>3</sup> showed on the basis of data limited to the professional classes in order to eliminate the influence of differences in environment that such a complex characteristic as the general health of the individual is inherited.

Taking all of the evidence together, it seems to indicate that health and longevity are not gifts of the gods, scattered impartially or at random among human beings, but that they tend to be distributed in family stocks in such a manner that some are above the average in strength and vitality while others are below the normal. The niceties of these interrelationships are blurred by deaths due to accidents and to the incidence of diseases which smother out the spark of life in even the strongest. Smallpox, yellow fever, influenza, pneumonia, take their toll of the strong, as well as of the weak. The frequency

of deaths due to such causes tends to obscure the importance of constitution, which we attempt to investigate, to such an extent that only large numbers and refined mathematical analysis can yield results of dependable value.

If I am right in placing confidence in the evidences for the inheritance of duration of life and of general health, is it not possible that we may have an inheritance of susceptibility to specific diseases, say, to tuberculosis?

Let there be no confusion concerning the attitude of the biometrician concerning the inheritance of disease as such. The genius of Pasteur and of Koch has made possible detailed knowledge of the rôle of certain organisms in the causation of disease. So brilliant, so appealing to the creative imagination of the scientific man, was the work of Pasteur and of the army of bacteriologists who have followed, that it was natural for the medical leaders of a decade or two ago to conclude that the microorganisms to which the symptoms of a given disease are due play the only significant part in the causation of disease.

But in science we must always examine and re-examine our premises, check and recheck our data, consider and reconsider our conclusions. In eternal restlessness of mind we must always seek to determine whether the scientific discoveries which we are forced to accept because of the compelling evidences which support them include and fully evaluate all of the factors involved in phenomena of the complexity of health and disease, survival under the burdens of life and untimely death.

We here encounter a group of problems of such baffling intricacies that we must have recourse to the methods of the mathematician in their analysis.

If the constitution of the individual plays a part in determining his or her susceptibility to tuberculosis, one of two conditions may be found:

First, it may be found that the constitution of each individual is essentially the result of random or wholly accidental causes. If this were true then a knowledge of the constitution of relatives would furnish no information whatsoever concerning the like characteristics of any individual. Information concerning the ancestry of the individual would give no clue to the probable susceptibility to tuberculosis. But our previous discussion and the general belief in the inheritance of such composite characters as health and longevity, as expressed in a large practical way in the usage of life insurance com-

panies, would suggest that the constitutional characteristics of the individual are not determined wholly by chance, but that they are in part matters of family stock. This would lead us to our other alternative.

Second, that constitution is an inherited complex and that susceptibility to infection by tuberculosis may in itself be in some degree dependent upon the inherited physique of the family to which the individual belongs.

In this field we have available certain critical investigations. Pearson<sup>4</sup> properly holds that no assumption of definite Mendelian factors will throw light on the mechanism of inheritance in pulmonary tuberculosis. Results must be obtained by considering statistically the occurrence of tuberculosis in children of parents of three classes:

First, those in neither of which tuberculosis developed.

Second, those in which one parent is affected by tuberculosis.

Third, those in which both parents are tuberculous.

Pearson measured the interrelationship between parents and children, between brothers and sisters, between brothers and brothers, and between sisters and sisters on a universally comparable scale of interrelationship known as the correlation coefficient. In general terms the correlation coefficient measures the relationship between  $x$  and  $y$ , where these are any two variables with which the biometrician has to deal. The correlation coefficient is such a measure that if knowing  $x$  we also fully know  $y$  the coefficient would take the value of 1.00. If a knowledge of  $x$  gives us no information whatsoever concerning  $y$  then the coefficient would be 0.

From studies based on such data as were available to him Pearson found material correlation for tuberculosis in parent and child. From these studies he concluded that the intensity of inheritance of pulmonary tuberculosis ranges from .4 to .5 on the correlation scale and that this is quite comparable with that found for normal physical characters in man. He further concluded that there is no ground for suspecting that environment influences inherited pathological conditions more than it does normal physical characters.

In the investigation of the relative importance of constitution and infection in tuberculosis our problem is involved. The constitutional or hereditary factor can only be studied, practically speaking, by a measurement of the similarity of parents and children or of brothers and sisters



in their susceptibility to tuberculosis as expressed in terms of material progress of the disease.

Parents and their children live under the same home environment. There may, therefore, be an increased opportunity for infection in such cases. If we find that the children of tuberculous parents are more likely to be tuberculous than children of non-tuberculous parents how shall we know that this represents a similarity of constitutional susceptibility to the disease in the case of members of the same family rather than increased opportunity for infection? Some progress in the analysis of this problem has been made by Pope, Pearson and Elderton<sup>5</sup> who have considered the correlation with respect to tuberculosis between husband and wife. Husband and wife live in a home environment similar to that of parents and children or of brothers and sisters. Notwithstanding this fact the correlation for tuberculosis in husband and wife was found to be lower than that between parents and offspring or between brothers and sisters. This would seem to indicate that inherited constitutional susceptibility played a major rôle in determining the closer correlation between parents and children or between the children of the same family. If opportunity for infection were the primary determining factor why should not the correlation between husband and wife be as close as that between parents and children? Furthermore a series of studies have demonstrated the existence of assortative mating for a number of characters. Men and women of like rather than unlike characteristics tend to marry. The coefficient of correlation between husband and wife for tuberculosis is of the general order of magnitude found for assortative mating for other physical characters. Thus it is quite possible that the constitutional characteristics which underlie susceptibility to tuberculosis rather than opportunity for infection may determine the correlation for tuberculosis in husband and wife.

In citing these biometric investigations on the problems of tuberculosis I have no desire to put them forward in a dogmatic way. The results

have been questioned by medical men. The whole field of literature cannot be critically reviewed or evaluated on an occasion like this. I am a biological statistician, not a medical man. I suggest these results for your thoughtful consideration merely.

Finally, what is the appeal of disease to the biometrician? It is two-fold: First, it is the appeal of complexity. It represents an opportunity for struggling with problems many of which cannot be solved by other methods. Second, it is the appeal of the possibility of joining in humanitarian service.

You are dealing with one phase of a great humanitarian problem. It is highly complex in nature. For its solution it requires the work of a corps of men of diversified training. Some men devote their days and their nights to immediate service to the unfortunate. Others must seek to determine fundamental laws in order that those who work directly in the service of suffering humanity may work more effectively. It is my belief that in the attack on these involved problems the statistician can, with the co-operation of medical and social workers, make a contribution which is worth while.

These are not merely academic questions. They have, as Pearson<sup>6</sup> has shown, a very pertinent bearing on the problem of the fight against tuberculosis as at present conducted.

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## SOME IMPORTANT FACTORS IN THE SURGICAL RISK\*

BY ARTHUR T. HOLBROOK, B.Sc., M.D., F.A.C.S.

MILWAUKEE, WISCONSIN

## INTRODUCTORY REMARKS

The stimulation which impelled me to write this paper was the experience that most of us had when we were medical students or young in the practice of medicine. We went to the operating-room of some famous surgeon, he was scrubbing up for the operation, and we saw him place his ear to the chest: "Yes, she is ready, we will go ahead!" Or perhaps we saw some great clinician in those days go so far as to ask the interne to put his stethoscope on the patient's chest and report if he heard any heart murmurs; "No, there are no heart murmurs," the interne said. "All right, we will go ahead." Those were the days when that subtle thing, surgical judgment, was in the hands of practically one man, the operating surgeon. He was the one who had the responsibility of rendering that judgment. But to-day, with our better understanding of the question of surgical risk, this responsibility is shared by the operating surgeon with the laboratory workers, with the associated internists, with the associated specialists in every department of medicine, and, although the operator is the one who has the final word, he certainly now shares the responsibility. I have attempted to take up some of the more important factors—of course, just some of them—in the surgical risk, gleaned from the different departments of medicine.

The surgical risk in a given case, in its final analysis, depends upon the rather subtle factor of "surgical judgment." It is not a long time since the operating surgeon, single-handed, assumed the responsibility of rendering this judgment; but the present-day organization of hospitals and clinics divides that responsibility among his associates or his team, and when decisions of procedure are made, although the operator is the final arbiter, he has had the opportunity of availing himself of the advice of specialists in every branch of the science.

This paper, therefore, is an attempt to collect from personal observation and study, and from reviewing the literature and reports, the best established means of reducing the surgical risk

as developed in these different departments of medicine.

Of necessity this means a discriminating summary of conclusions covering many subjects, and precludes much substantiating detail and argument.

These subjects will be considered under the following heads: Cardiovascular, Renal, Hepatic, Respiratory, Blood, Thyroid, Focal Infections, Diabetes and Acidosis, Certain Gastro-intestinal Lesions, and Anesthesia.

I. *Cardiovascular.* It has taken many years to demonstrate that, regardless of other heart findings, it is the condition of the musculature of the heart that answers the question as to whether or not that particular heart will stand the stress of operation. The valvular lesions, disclosed by murmurs, are always factors in the consideration; but dynamically the heart failure or collapse in operation results from the inability of the left ventricle to empty itself, and this is chiefly a matter of muscular competency.

Clinically, degeneration of the myocardium and lesions of the aortic valves constitute the most dangerous heart conditions affecting surgical risk; and these affections, plus the high arterial tension of sclerosed, unyielding vessels, constitute the greatest handicap to proper ventricular emptying.

The vast majority of compensated valvular heart lesions bear anesthesia and operation well. Decompensated hearts present grave risks; but, fortunately, such conditions are frankly exposed as a grave warning to anesthetist and surgeon.

Sir James McKenzie, than whom probably no one has had more experience in heart examinations, has stated that, after thirty-five years of study to find some definite method of determining the ability of a heart to withstand operation and obstetric delivery, he had found none beyond the general impression formed from consideration of many elements,—the history, appearance, signs, symptoms, pulse, and blood pressure. Within a comparatively few years, however, we have had the use of two instruments the careful study and application of which have done much to make conclusions on heart competency far more scientific and accurate; and although the sphygmomanometer and electrocardiograph yield results which at times are difficult to standardize and may be beyond the interpretation of the aver-

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age surgeon, the information they gave to one who is familiar with their use is definite and valuable, and in well-equipped institutions is readily available and should be put to practical everyday application in the operating room. There are few points of contact that are more valuable than this between the surgeon and the associated internist.

In the determination of myocardial competency the significance of blood pressure is chiefly in the pulse pressure; and in the varying scale the diastolic pressure, as a rule, should be given more consideration than systolic.

Cases with high pulse pressure and a low diastolic are precarious. A ratio of 1 to 2 or lower between the pulse pressure and the systolic is dangerous. Diastolic of over 100 in any case is always a suspicious circumstance. Systolic of over 180 in problematic cases should always suggest an estimation of renal function, a report on eye-grounds and a blood chemistry. A rise in blood pressure is usual just preceding an operation, and this is usually augmented in the early stage of anesthesia. In gas-oxygen this rise is oftentimes sustained, but may be reduced by slow, careful induction and regulation. Under rebreathing and cyanosis it may go up at an alarming rate. In ether the blood pressure is raised to a lesser degree than gas-oxygen and after a careful induction soon falls to a point somewhat above that which is normal to the individual. A marked fall in pressure during operation is always significant as it follows hemorrhage, over-anesthetization, trauma, toxemia, pain, and fear. Any one of these elements may dominate, but in the progressive fall that denotes the condition of surgical shock there is usually a combination of two or more. In severe shock there is no tendency to recover from the fall in pressure unless therapeutically combated.

Ether inhaled by a patient in shock causes a further drop of pressure. Gas-oxygen can be given to a shocked patient without causing more than a slight drop. In convulsions there is a reversal of the rule for shock, in a marked rise in blood pressure.

No one is able to diagnose varying degrees or the progress of circulatory depression merely by feeling and counting the pulse; but the sphygmomanometer tells the conditions accurately and therefore should be a part of every anesthesiologist's armamentarium and should be applied in all appropriate, doubtful cases.

Dr. Herb has called attention to the proneness of most anesthetists to watch the respirations and eye reflexes for their danger signals, whereas

the failure in the circulation is the important factor and is the almost constant cause of respiratory failure.

In aged patients the degenerated arteries and heart muscles constitute the chief element in operative risk. Unfortunately, malignancies and other serious surgical conditions increase with age, and the risk of age must be subordinated to the greater risk of danger to life. The proper care, therefore, of the heart is imperative in old people who come to the operating table.

We have had the opportunity of studying the results of the pre-operative and post-operative use of digitalis as a routine measure in a considerable series of cases in the Milwaukee Hospital, in aged patients, particularly those operated on for abdominal lesions, hernias, and prostatectomies. There is no question of the value of this routine digitalis treatment in conserving the aged patient's strength, hastening the convalescence, and aiding in the desirable early assuming of upright posture and frequent changes of position.

In less evident cardiac conditions recourse must be had to the electrocardiograph. While the taking of blood pressure is a simple process and the interpretation of its findings not difficult, the taking of an electrocardiogram and the appreciation of its significance is a highly technical and specialized performance. It would be a waste of time to detail for a surgeon's attention the readings of series of studies made in this field; but the accurate work of men like Willius of the Mayo Clinic has covered such an adequate number of cases and conditions that all surgeons and anesthetists should be familiar with the fact that there is available such valuable, standardized information for the determination of the surgical risk, and be somewhat familiar with the method of reaching this information and the graphic way in which it is presented.

Inefficiency of the myocardium is shown conclusively to follow definite inco-ordination in the contraction of various muscle bundles in the walls of the heart, causing auricular fibrillations and flutter and auricular tachycardia with partial or complete heart-block. Expressed in terms of the electrocardiogram, the danger signals of high and early cardiac mortality in operation are:

T-wave negativity in various leads, provided digitalis has not been recently given.

In a series of cases showing this T-wave negatively, not operated on, 62 to 65 per cent died within twelve and seven-tenths months.

Aberrations of the Q R S complex, namely, notching of the apex, ascending or descending limb, or widening of the base width to exceed

one-tenth of a second in all leads, carries a mortality amounting to 62.9 per cent in fourteen and two-tenths months in a series of 81 patients studied by Willis.

With such precise prognostic information before him the surgeon would subject such risks to operation only under the most imperative demands.

The knowledge of the margin of risk in his patient, disclosed by the method we have been considering, puts the competent anesthetist on his guard to discover impending circulatory failure and to report its onset at an early enough moment for the successful instituting of restorative measures.

In the adult a progressively increasing pulse rate above 100, and a decreasing blood pressure below a systolic of 80 and a pulse pressure of 20 or less indicate definitely the inability of the patient to withstand the depressing influences at work and mark a moment for instituting active treatment if not already undertaken. If skillfully detected there is a period of time in which a large majority of these patients may be recovered. If the condition is permitted to progress untreated and the causes of depression not eliminated, twenty to thirty minutes is probably the extreme time limit before most cases become hopeless. It is important, therefore, to act promptly, important to have at hand the saline or gum-glucose or other preferred solution, the proper heating device, and the apparatus for immediate intravenous use. The twenty to thirty precious moments should not be dissipated by unpreparedness. It is no time for subcutaneous or rectal injection. The vascular system must be filled as promptly as safety permits and the proceeding continued or repeated until the patient is able to maintain the desired blood pressure. A decided improvement may follow 500 c.c. of saline solution, but enough should be used to bring the systolic pressure up to within 10 or 15 mm. of the patient's normal, and to maintain this by slow additions until the operation is completed. After this the rectal drip for twenty-four to thirty-six hours may be all that is required. It may, however, be necessary to give more intravenously, and it should be kept in mind that it is chiefly the blood-pressure instrument that is to determine the amount to be given and not the measuring scale on the side of the container. It may take 250 c.c. to restore the patient, and it may take 2500 c.c.

Of drugs, morphine and digitalis are the two that may be of use, and in cases where it is probable that digitalis will be required after the oper-

ation, it is well to give it before operating so that the drug may be active when the strain comes to the heart muscle. This is particularly useful where auricular flutter has been detected.

II. *Renal*.—From the standpoint of surgical risk in general the most important renal considerations are the adequate removal from the blood of nitrogenous waste as shown by blood chemistry, and the competency of the kidney as shown by the phenolsulphonephthalein test. Nitrogenous retention must be met by stimulating elimination through other excretory channels and regulation of food intake as pre-operative measures. Consistent failure of the kidneys to excrete the standard amount of dye at a standard rate in the phthalein test has an important prognostic significance and is precise and reliable.

The matter of kidney competency so vitally affects a great many surgical conditions and has so definite a bearing upon the risk and selection of operative procedure, that the value and ready availability of blood chemistry and renal function tests should lead the surgeon to their very frequent use.

A mooted question in surgical risk is that of the advisability of operation upon one or both or neither of the kidneys when calculi are demonstrated in both kidneys. One group of surgeons considers operation upon cases of bilateral stones as being always fraught with much danger and decrees against operation upon either kidney unless the symptoms are urgent. Others are far less conservative and unless stones are of the large, stag-horn variety, do not hesitate to operate under the rule of attacking first the better functioning kidney and the second one later; or, if the function is about equal, to operate first upon the kidney showing the more noticeable symptoms. Whatever course is pursued it is certainly important for the surgeon to be on his guard in demonstrated or suspected bilateral stone cases, to estimate to his satisfaction the competency of each kidney, to study the blood chemistry, to consider the amount of suffering, the economic aspects of age, life expectancy, family, occupation, and all factors that he can collect to aid his surgical judgment.

III. *Hepatic*.—The effects of anesthesia upon the liver have long been of interest to the surgeon. There is much evidence that gas-oxygen is the least harmful to the liver. La Rocque, of Montreal, declares it is the only general anesthetic that does not injure the hepatic cell and that it is the only one that should be used in cases of hepatic lesions and of operations on the biliary tract. This will not be accepted by many surgeons of



wide experience who will show long series in support of the satisfactory use of ether. As a matter of surgical risk, however, with the patient's poor general condition adding to the problem, gas-oxygen is generally accepted as the safest anesthetic for liver cases.

Obstructive jaundice greatly increases the operative hazard. The high mortality in jaundiced patients is due largely to hemorrhage related to impaired coagulability in the bile-laden blood. If operation cannot be postponed calcium chlorid does much to restore coagulation power. Walters recommends an intravenous dose of 5 c.c. of a 10 per cent calcium chlorid solution on each of three successive days.

IV. *Respiratory*.—In patients showing respiratory-tract infections operation should be postponed unless extremely urgent.

Hospital records show conclusively the increased risk in operating during epidemics of influenza, and, if possible, operations should not be done until immunity is established in the community.

Obesity adds greatly to the respiratory risk and, inasmuch as extremely fat patients are prone to poor healing, some clinics have adopted a rule of insisting on a pre-operative reducing regime whenever practicable in patients who are 30 per cent over normal weight. They are hospitalized, and through diet, excretion, and such exercising and bathing as circumstances permit, a daily reduction up to one and one-half pounds is sought until the patient is improved as far as may be possible.

The chief danger in respiratory cases comes from the irritation of the inhaled anesthetic, the deep breathing of anesthesia, and the loss of laryngeal reflex, forming a combination by which any infection in the upper tract may readily reach the deep pulmonary air passages and cells.

In tuberculosis the surgeon must be informed definitely as to the pulmonary conditions so that he may choose his anesthetic and plan the length of his operation.

In any questionable pulmonary case on which operation is imperative, any anesthetic excepting local is dangerous. Ether has an especially bad reputation. Gas-oxygen is less irritating. Chloroform, if not contraindicated, would probably be most satisfactory. Local anesthesia should always be used when possible.

V. *Blood*.—Grave anemia is always a serious surgical hazard. It is impossible to formulate fixed rules to fit all conditions and the varying degrees of urgency; but it is a good general rule to raise the hemoglobin before operating

to at least 50 per cent and to 60 per cent if possible, and to increase the erythrocytes to 3,500,000 to 4,000,000. Citrated blood transfusion is effective and much easier to perform than direct transfusion.

We recently had a case of an unmarried woman of 50, admitted to Columbia Hospital, Milwaukee, following hemorrhage from a uterine fibroid with a hemoglobin checked by both Dare and Tallquist scales to be 13 per cent and a red count of 1,130,000. Under the transfusion of about 500 c.c. of citrated blood, performed five times in the twenty-three days following her admission, at intervals varying from three to six days, her hemoglobin rose to 60 per cent and the red cells to 3,960,000. A hysterectomy was then done and with no further transfusion the blood in eighteen days from the time of operation rose to 70 per cent hemoglobin and 4,610,000 erythrocytes. During her preoperative period and for a month after the operation this patient was given red bone marrow and splenic extract after the method of Drs. Leake. We have had considerable personal experience with spleen-marrow treatment and have found it of positive value in the care of secondary anemias.

Before leaving the subject of blood it is well to emphasize that obscure, unexplained anemias should always suggest possible malignancy.

VI. *Thyroid*.—The Mayo Clinic reported last year a reduction in mortality for exophthalmic goiter of 1.74 per cent in terms of cases and 1.005 per cent in terms of operation. Dr. Charles Mayo ascribes this to the co-operation of internists and laboratory workers in improving pre-operative medical care, the consistent use of basal metabolism indications, and the earlier operations before the long-continued hyperthyroidism has caused visceral degeneration. Within recent years the wider dissemination of the benefits derived from surgery has led patients to consent to, and even to seek, an early operation. In 1909 the average duration of hyperthyroidism before operation in the Mayo Clinic was 31 months; in 1916 it was 23 months; in 1922 it fell to 19 months.

About 70 per cent of toxic thyroid adenomata cases need pre-operative care for hyperthyroidism or debility. This care should be rest; adequate food and fluid intake; digitalis as indicated; the oral administration of iodine, as in Lugol's solution (10 drops in 24 hours); repeated basal metabolism readings, taken every three or four days. Under such a regimen most patients are ready for thyroidectomy in from ten to fourteen days. If doubt still exists as to the surgical risk,

ligation is commonly used as a tolerance test. In a few cases (20 to 25 per cent of the total) two ligations and a three months' period of rest are indicated. It should be kept in mind that in certain stages of the disease the removal of the gland is attended by great danger, particularly just preceding, during, or closely following a crisis. As a protection to the surgeon and a guide to the limitations of his operation, a laryngoscopic examination to determine vocal cord nerve competency before thyroidectomy is a valuable procedure.

Dr. Bevan believes that the improvement in thyroid mortality in his clinic is largely due to the employment of local anesthesia, and, in bad cases, to avoiding the radical procedure and operating by installments. He believes that the ligating of a single thyroid artery is of very little service, ligation of two arteries is better and of three usually shows a very satisfactory effect upon the toxic symptoms. He is guided but very little by basal metabolism readings and is coming more and more to deciding the question for or against operation by his own impression of the clinical picture, using the basal metabolism reports much as one would use the leucocyte count in an appendicitis, where the clinical picture really determines the question of operation.

In reviewing the reports of a large number of clinicians on thyroid surgery one is struck by the consistent agreement that the lessened operative risk is in large measure due to the combined employment of medical and surgical care for the patient.

*VII Focal infection.*—Infected teeth and tonsils should not be disturbed in cases that have been operated on for other causes until surgical convalescence has been well established, for the reaction which follows the attacking of foci is sometimes severe and becomes generalized.

Heart valves, particularly when damaged, are very favorable tissue for bacterial growth. This is particularly true of streptococci, especially of hemolyticus and viridans strains, and, inasmuch as these germs are commonly found about teeth, tonsils, and nasal membranes, sinuses and other structures which are frequently subjected to surgical treatment, it is especially important for the physician who refers cases and for the dentist or other specialist who operates, to keep these facts clearly in mind. The dental practice of curettement following extractions, rough or mutilating handling of nose, throat, or sinus tissue may introduce a bacteremia, and, if this be in the case of an old endocarditis, where the fact of previous infection suggests low resistance and

where heart valves offer favorable soil, we may soon have secondary foci of infection on these valves feeding the blood stream.

The danger of this condition is further emphasized by the hypothesis that blood, in order effectively to exercise its bactericidal power, must be distributed in capillary vessels, and that the blood stream as it flows through the heart and larger vessels has very little of such power. Hence the bacteria find the heart valves an ideal place of lodgement.

*VIII. Diabetes and Acidosis.*—Although it is well known that mild diabetics may be successfully and satisfactorily operated on, and, although distinction is often made between glycosuria and true diabetes mellitus, it is well to recall an old dictum that "the presence of sugar in the urine, whatever its amount, is always a serious fact."

Certain surgical affections have definite relations with glycosuria. Sugar tolerance is reduced in exophthalmic goiter. Diabetes is often associated with gall-stones, presumably because the lymphatic connections allow the development of pancreatitis, which may affect the "islets."

Boils, carbuncles, and gangrene should always suggest a careful search for sugar in urine or blood.

In preparing the diabetic for operation the diet, of course, is of the utmost importance. It must be adjusted with all the skill which study and experience can give. The sudden unbalance in carbohydrates or fats through the order of a careless or inexperienced attendant may bring on serious disaster.

Insulin has been of the greatest benefit both before and after operation; and this drug should be given with every safeguard taught by authority. The dangers of hypo- or hyperglycemia must be kept clearly in mind, and the physician who gives insulin without an understanding of these matters is guilty of malpractice. Given a competent medical associate to secure the proper balancing of carbohydrate intake and insulin, the surgeon should be justified in the confidence that he may operate upon most diabetics with almost the same assurance with which he approaches the non-diabetic.

In preparation it must be remembered that in all advanced cases the cardiovascular apparatus is invariably impaired and should be treated. Digitalis should be given unless contra-indicated.

In questionable cases the kidney function should be studied and blood chemistry carefully determined. Proper balance of intake and output must be accomplished if possible. Blood sugar over 0.35 per cent, or plasma CO<sub>2</sub> combin-



ing power of less than 40 per cent renders operation hopeless.

The anesthetic is of importance. Chloroform injuriously affects the liver and body fats. Ether does the same to a less extent. Local anesthesia predisposes to extensive necrosis if infection occurs. Gas-oxygen is the general anesthesia of choice, and spinal anesthesia is preferred by many for operations on pelvis and lower extremities.

Mutilation of tissue in operations on diabetics, particularly in cases of long standing, is dangerous. The vascular degeneration in such cases lowers tissue vitality so that rough handling will readily predispose to infection. It is important that the operation be done in a rapid, clean, dry manner.

Infected cases in diabetics are bad risks. Mortality records from four important clinics for non-infected diabetic surgery show from 9 to 12 per cent of deaths; in infected cases, from 21 to 50 per cent.

In septic cases operation should be done at once and not delayed for medical care.

The most important post-operative complication is coma, which will readily occur if the balance is easily upset. It is due to the development of acid or ketone bodies, beta-oxybutyric and diacetic acids, and acetone. The combating of this acidosis by the use of alkalis, notably sodium bicarbonate, has been unsuccessful, although this line of treatment has aided in the relief of some symptoms of the toxemia.

Although, as Kahn states, we "have never seen a case of diabetic intoxication that was saved by the administration of sodium bicarbonate," we have seen cases where we are certain it helped; and until the intricate chemistry of these conditions reaches a stage that discredits its use we shall continue to give our patients suffering from acidosis sodium bicarbonate by mouth, when they are able to swallow it.

The advent of insulin, however, has taken these alkaline drugs out of the limelight, and where we were empirically striving in an unscientific method, we now have a definite, scientific means of combating acidosis and coma. The judicious use of insulin and intravenous glucose solution in competent hands has saved many lives that would have been lost before this treatment was available.

Those of us who have been associated with Dr. Thalhimer in his work in Columbia Hospital, Milwaukee, have seen the remarkably satisfactory results of insulin-glucose administration, not alone in diabetes but also in non-diabetic, post-

operative acidosis. It was found that insulin therapy in the non-diabetic must be controlled even more carefully than in diabetes; and at least 2 gm. of glucose supplied to the body for every unit of insulin injected.

Next to coma gangrene is the most important diabetic complication. Generally speaking, it is a late complication and associated with arteriosclerosis and a hopeless endarteritis with obliteration. No argument is necessary, therefore, to emphasize the importance of early amputation done amply high in healthier tissue.

IX *Certain gastro-intestinal lesions.*—The surgical statistics for operation on *abdominal malignancies* would be bettered if more careful search than is ordinarily made were given to reveal metastasis. In addition to the usual routine and the x-ray examination of the chest, McVicar urges a search for the metastatic involvement of the so-called "sentinel gland" in the left supraclavicular space, and a digital examination for the implant of malignant cells on the rectal shelf. These two locations are of great importance in determining the dissemination of deep-seated abdominal malignancy, and a positive finding in them constitutes a definite contra-indication to operation. If there is question about the origin of the glandular enlargement, removal of the gland and histologic diagnosis is necessary before planning for the care of the primary lesion.

Patients suffering from the *retention of gastric contents* because of the impaired musculature of malignancies or from pyloric obstruction should have a most carefully regulated pre-operative preparation. Fluids are not absorbed by the stomach, and dehydration is added to starvation.

These patients are often subjected to unnecessary diagnostic tests, which add to their distress. The employment of an established diagnostic routine of test meals, fractional readings, repeated barium meals, and numerous seances in the x-ray room, in cases where the symptoms frankly disclose the condition, is inexcusable. In the presence of retention a secretory test meal, for instance, is of no value, and diagnostic measures, in most cases, could be restricted to lavage, and in questions of pathologic lesions the fluoroscopic examination and roentgenograms of the stomach and duodenum following a single barium meal.

Diagnosis established, one or two days should be given to physical and mental rest and the attempt to restore fluid to the tissues by the giving of almost any kind of fluid by mouth if it will pass the pylorus; or, if obstructed, by the use of the Murphy drip of about 2,000 c.c. in twenty-

four hours of a glucose-sodium bicarbonate solution, glucose from 3 to 10 per cent and soda, 2 to 5 per cent. Gastric lavage should be done daily, and, if it is found that the total of aspirated and vomited stomach contents plus the urine exceeds the liquid intake, pre-operative care should at once give way to surgery.

In *high intestinal* obstruction, in duodenum or upper jejunum, there is likely to occur a retention of nitrogenous waste products in the blood, with or without the development of tetany. Manifestations of tetany may be counteracted by the intravenous use of physiologic sodium chlorid solution. Rectal drip aids materially in lowering the percentage of accumulated nitrogenous waste.

*Obstruction in the lower tract*, in the large intestine, usually gives more chance for the ingestion of fluids by mouth and hence less accumulation of nitrogenous waste.

**X Anesthesia.**—Under the special topics considered in this paper, attempt has been made to include their particular relation to anesthesia. There are, however, some considerations under anesthesia as affecting the operative risk that should be added.

In this day when local anesthesia is so extensively employed, it would be well for every anesthesiologist and surgeon to be familiar with the recommendations published in March, 1924, as the result of an exhaustive investigation by the Committee of the American Medical Association for the Study of the Toxic Effects of Local Anesthesia, through Dr. Emil Mayer, the chairman.

Some of the important items are:

Great care should be used in not confusing procain with cocain.

Procain is far safer than any other local anesthetic in common use; but it should be used with caution and with known dilution and dosage, as it is capable of causing death when large amounts are injected into the tissue.

Cocain should never be injected subcutaneously or into the submucous tissues.

Cocain paste ("mud") should not be used as a pre-operative measure.

Local anesthetics should not be injected into the urethra when trauma or stricture exists.

Especial care should be exercised in the use of local anesthesia when grave constitutional disease exists.

All doses of local anesthetics, however applied, should be accurately measured.

Stock solutions which have been used for repeated injections, are seldom sterile, and their routine use is condemned.

Whether or not we accept the physiologic and

pathologic hypotheses given by Crile for his anociation methods, it is generally accepted as essential in the lessening of the operation risk to adopt every available measure for the reduction of mental and emotional agitation of the patient about to be subjected to operation. The most important period for this care begins just previous to his trip to the operating room and ends with the induction of general anesthesia, or with the return to his room after the use of local or spinal anesthesia. During this time, whatever method or device is used, it should be in the mind of every attendant and member of the operating team that the best efforts common sense and study can provide should be used to give the patient assurance and confidence in the successful and satisfactory outcome of the operation.

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#### DISCUSSION

DR. ERNEST V. SMITH (Fond du Lac, Wis.): We have all had the patient with pyloric stenosis who has been vomiting for some time, who is just the shadow of a person with his fluids and vitality gone. It is a mistake to have that patient in the operating room the day after he comes to the hospital and have him undergo an operation such as gastro-enterostomy. The fluids should be restored by the administration of salines per rectum and by hypodermoclysis. The alimentary canal should be cleaned out. As the essayist has indicated, there is no sense in subjecting such a patient to repeated test meals or repeated barium examinations. We know from the symptoms that the patient is all washed out—has no fluids; we can tell the moment we see the patient.

The operation should be done with the least possible handling of tissues and done rapidly.

The patient with a surgical condition and with a low blood pressure is one to be feared. I am not especially afraid of high blood pressure if handled correctly. Patients with high blood pressure do not need fluid so much. The one with the low blood pressure is often the one that will snuff out at the beginning of the operation. That is often seen in



young patients with exophthalmic goiter. They have, as a rule, a low systolic pressure with a fairly high diastolic pressure. Those are the ones that are in danger.

Just one word as to the value and the accuracy of the metabolic test: As time goes on we are going to look upon the metabolic test only as an adjunct in diagnosing the degree of severity of exophthalmic goiter. It is only one of the many things which

tell us something about the patient that has a hyperplastic thyroid. We cannot lay down any steady rule governing the relationship between the metabolic reading and the treatment. Very often we have cases with high metabolic reading in which we know from clinical study of the particular case that the patient will endure thyroidectomy. The laboratory findings should be regarded only as a corroboration of the clinical findings.

## PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

Meeting of February 9, 1927

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, February 9, 1927, at 8 P.M. Dinner was served at 7 P.M.

The meeting was called to order by the vice-President, Dr. J. E. Hynes. There were thirty members and three visitors present.

The minutes of the January meeting were read and approved.

Dr. R. E. Farr (Minneapolis) reported a case of ulcer of the stomach, as follows:

The custom of reporting our successes before medical societies has become so well established that I feel it worth while to confess one of my errors before this body.

I report the following case for the purpose of illustrating a missed diagnosis, due to the misinterpretation of films by a radiographic expert and myself, and because of the further fact that, through the force of circumstances, I allowed myself to be hurried into the performance of an operation without employing measures which might otherwise have resulted in a definite pre-operative diagnosis with the satisfaction that attaches thereto.

Mr. K., age 59, entered St. Mary's Hospital on January 13th, 1927, being referred by a group of physicians who had endeavored to make a diagnosis by taking the history, making a physical examination and inducing the patient to submit to a radiologic examination at the hands of a recognized expert.

The case was referred to me under the following conditions. While I was operating, one of the physicians who had been investigating the patient entered the operating room and stated that he would like to have me operate on a patient on the following morning. I demurred, stating that I desired more time in which to investigate the case. He stated that the patient had an epigastric tumor of some months' duration, was practically without gastric or duodenal symptoms, and presented, in writing, the radiographic report which is as follows:

"A series of plates and fluoroscopic examinations made immediately after a barium meal show the stomach normal in size, shape, and position. There is no evidence of a lesion involving the

stomach and at the pyloric end in addition there is considerable dilatation of the entire duodenum.

"Examination at six hours shows the head of the column in the ascending colon, the tail in the lower ileum.

"Examination at twenty-four hours shows the head of the column in the rectum, the tail in the cecum. The cecum is freely movable. The appendix is not visualized, and there is no localized tenderness on pressure.

"Conclusions: There is no evidence of cancer or ulcer of the stomach and no evidence of duodenal ulcer. There is evidence of an extragastric mass in the right upper quadrant of the abdomen which is causing a pressure deformity on the stomach and some adhesions and stasis in the duodenum. This, I believe, might be either gall-bladder involvement or a pancreatic tumor."

Signed.....M.D.

The referring physician stated that he had seen the patient three years before in a rather severe attack of epigastric pain, that the patient was laid up for a short time and that he considered it a "sprain" of the right rectus muscle. He stated that the patient's history was practically negative from the standpoint of gastric symptoms. With this information, the x-ray report, and a fixed, plainly palpable tumor midway between the xiphoid and the umbilicus, a diagnosis of pancreatic cyst seemed probable.

This conversation took place on Thursday, and as the physicians could not be present on Saturday and stated that the patient would not consent to wait until Monday, I reluctantly agreed to operate Friday.

The patient entered St. Mary's Hospital on Thursday evening where he was seen by my associate, Dr. Caron, who telephoned me the history and findings which are as follows:

History: Patient, a male, 59 years of age, states that except for rheumatism forty years ago he has never been previously ill. His present complaint is gastric fullness. The patient states that for the past year he has noticed a sense of fullness or tightness over the epigastrium occurring after meals. These symptoms gradually disappear and seem to be aggravated by intake of more food. The pain is not of a burning nature, is not referred; soda has not been tried; nausea or vomiting has never occurred. There have been no loss of weight and no jaundice at any time. The course has been pro-

gressive; that is, the sense of tightness over the epigastrium following meals seems to be slightly worse of late when large amounts are taken. Although the above-mentioned symptoms are the patient's present complaint, his reason for consulting a doctor was a sudden, sharp, cramp-like pain in the epigastrium which occurred a week ago while trying to lift a heavy block. This pain was sharp and cramp-like, localized over the epigastrium, and lasted but three or four minutes; however the sense of stiffness and soreness over the abdomen did not subside. The patient then consulted a doctor. The doctor took the history, examined the patient, and advised gastro-intestinal *x*-ray.

The physical examination reveals a fairly well-nourished male, not acutely ill. Temperature, 98°; pulse, 70; respiration, 18; and blood pressure 125/80.

The essential findings consist of a tumor in the epigastrium. Palpation and percussion show a tumor mass which is not movable except on respiration. Tenderness is present, but not exquisite. There is no rigidity of the abdomen. Other organs are not palpable. Regional examination is essentially negative.

I did not see the patient on Thursday evening and arrived at the hospital late on Friday morning to find him already upon the operating table. I then made a careful physical examination, finding a rather fixed tumor mass in the upper abdomen at the midline. It was not tender and as the radiographic report stated that it was extragastric and extraduodenal, I made a tentative diagnosis of a pancreatic cyst. (A cursory examination of twelve radiographic films did not aid me materially in arriving at a definite conclusion.)

The operation under local anesthesia was proceeded with at once, and a transrectus incision with a vertical incision upward at the midline was made.

Pathology: A chronic duodenal ulcer attached to the parietal peritoneum was encountered. An indurated tumor the size of a lemon presented, with extensive periduodenal adhesions. The lesser curvature and duodenum were freely mobilized after the method of Finney, and a Billroth I performed after excision of the tumor. (Frozen sections showed that the tumor was benign.) The duodenum was divided diagonally and except for a rather serious post-operative heart block (his pulse during the operation remained below 70), the patient has made a rather good recovery. He is now daily taking 1,800 calories and 2,500 c.c. of fluid and is being mildly alkalinized as his acidity continues high. The stomach is lavaged once a day with a solution of sodium bicarbonate.

Comment: This case is reported for the purpose of admitting pre-operative mismanagement. I feel that I should have delayed the operation until I had had sufficient time in which to—

(a) Check personally the patient's history.

(b) Investigate more thoroughly the condition of the myocardium.

(c) Employ pneumoperitoneum for the purpose of ascertaining whether or not the tumor was retroperitoneal.

(d) More carefully studying the films (the constant presence of a shadow over 1 cm. square in ten of the twelve films should have been suggestive of ulcer). Radiograms shown.

(e) Further, a radiogram taken in the transverse diameter with the patient lying upon his back would have demonstrated the duodenum firmly attached to the anterior abdominal wall.

(f) As all cases of gastric surgery should be preceded by at least 2 days of the administration of sterilized food and meticulous attention to oral asepsis, this feature would have been attended to.

(g) In such cases it is not unusual to neglect to sterilize the instruments employed for gastric and duodenal surgery, thus resulting in preventable delay when the pre-operative diagnosis is incorrect.

I feel that, notwithstanding the fortunate outcome, this report may be the means of calling attention to some of our shortcomings which result from the force of circumstances and which may be reduced to a minimum by the exhibition of a somewhat more authoritative attitude on the part of surgeons when similar exigencies arise.

Dr. Carl B. Drake (St Paul) reported a case of amebic dysentery treated with Stovarsol:

Mrs. D., aged 26, came to the office June 3, 1926, complaining of dysentery of three months' duration. At first she had watery stools with considerable mucus and some blood as often as twenty-five a day. A year previously she had had a diarrhea for a week. Her appendix had been removed in 1924. She had lost twenty-four pounds since her marriage four years before. Tonsillectomy had been performed ten years before. Recent *x*-ray examination had failed to show any abnormality of the gastro-intestinal tract, and the institution of a very bland diet of boiled milk, burnt flour, soup, and gruels had failed to relieve the condition. Of late the bowel movements had been most frequent mornings and evenings, very little trouble having been experienced at night. There was fever at first and a few canker sores in the mouth lately. She had not been out of the city during the past year.

Examination showed a poorly nourished young woman, weighing 100 pounds; her normal weight being 128 pounds. There were a few ulcerated areas in the mucous membranes of the mouth. Aside from a slight tenderness in the region of the appendectomy scar nothing abnormal was found. The stomach acidity was free HCl 10; total acidity 18. Proctoscopic examination showed an inflamed mucous membrane, some mucus, but no ulceration. The blood hemoglobin was 43 per cent; r.b.c., 5,000,000; w.b.c., 10,000. Temperature, pulse, and blood pressure were normal.

Motile entamebæ histolyicæ were found on first examination of the stool by Dr. Warwick.

The patient was put to bed in the hospital and treated energetically for three weeks with emetin hydrochloride, gr. 0.5, twice a day for a week at a time, emetin bismuth iodide, gr. 1, by mouth three times a day after meals, quinin retention enemas, bismuth subcarbonate hourly for a time, but with only slight improvement.

For the next two and a half months the patient received courses of emetin intramuscularly, bismuth, fluid extract of chapparó amargosa, emetin bismuth iodide orally off and on, but she became progressively weaker and more emaciated.

On September 25 all medication was stopped, a more liberal diet was given, and stovarsol tablets (0.25 gm. each) orally after meals were administered



for five days. Some improvement was noted. After taking no medication for the succeeding five days, the tablets were resumed, and in two days twenty-four hours passed without a bowel movement for the first time in seven months.

The patient was in the office to-day and looked well. She had gained thirteen pounds in weight. Her hemoglobin had increased to 75 per cent. She has had a slight diarrhea for a day at a time, having from one to six stools in twenty-four hours about every two weeks. This has been promptly relieved by commencing the stovarsol.

Examination of the returned soldiers after the World War showed some 12 per cent infected with the *entameba histolytica*. Various reports indicate that about 10 per cent of the civilian population of the northwest portion of this country is similarly infected. Why all so infected do not have symptoms of dysentery is not clear. Craig believes the infection produces symptoms in 50 per cent or more of the carriers. He mentions constipation relieved periodically by diarrhea for a day or two, loss of appetite, loss of weight, slight anemia. Buie thinks the infection is secondary oftentimes in cases of chronic ulcerative colitis, which he believes is caused by Bargan's lanceolated diplococcus. The relation of the infection to certain cases of iritis is probably not proven as yet.

When we consider the extensiveness of the intestinal infection even in carriers it is remarkable that all those infected do not present symptoms.

My attention was called to stovarsol by an article by John and Jamison which appeared in the *Journal of the A. M. A.*, June 20, 1925. All of 46 cases, both acute and chronic, were relieved in three to six days of all dysentery symptoms with 0.5 to 1 gm. of stovarsol daily. Dr. P. W. Brown, of Rochester, informed me that 85 per cent of their cases have responded to stovarsol alone.

The preparation is the acetyl derivative of arsenic acid and contains about 27 per cent arsenic. It comes in tablets of 0.25 gm. and may be given three times a day after meals for five days with ten-day periods of rest.

#### DISCUSSION

DR. HEAD (Minneapolis): Are there still amebæ in the stools?

DR. DRAKE: That has not been checked up.

DR. GARDNER (Minneapolis): Dr. Drake referred to the frequency of infection with pathogenic *entamebæ*. I know that statements have been made by workers on the Pacific Coast that amebæ are extremely common in normal people and can be found in the stools. This was only partially confirmed by work at the Mayo Clinic in the cases which they studied. In our experience we have examined several thousand stools and have found parastitic infections very common. In an informal discussion at Dallas last summer, some Southern parasitologists stated that they did not find the infection in the South as frequently as those on the Pacific Coast would indicate. I wonder whether large phagocytic cells frequently found in stools, especially when mucus is present or other signs of colonic irritation exist, are not being mistaken for amebæ. I cannot help but feel that amebic in-

fection is rare in this locality, although we should approach the subject with an open mind.

DR. GILFILLAN (St. Paul): I have had occasion to look up the action of arsenic in dysentery, and apparently it does good in the non-entamebic form of colitis also. First, neo-arsphenamine was used intravenously. Then a Frenchman used neo-arsphenamine in solution by mouth, with good results, and then had the neo-arsphenamine put up in gluten-coated pills, because it oxidizes rapidly and loses its strength. Then he used stovarsol, treparsol, and all of those, and he thinks arsphenamine is the best of all. He points out that emetin and ipecac help in the acute stages of the disease, but they do not kill the organisms; then there comes a stage when they no longer do any good. Then arsenic does good. He has cases that he has tried these remedies on; their amebæ disappear if the remedy is used for a few days, but they come back again in a little while, and they cannot be eliminated in a few days. He gives arsphenamine in compressed tablet form, 0.2 gm., and gives 0.5 to 1 gm. by mouth for a number of days and continues with small doses. He has tried it out on carriers, and it causes amebæ to disappear from the bowel. He tells of one experiment of a man who took ameba stools in capsules and at the same time took stovarsol and did not develop a dysentery. He got only one man to do this so his series is not a long one. Apparently they have found something which does good in dysentery and in other forms of colitis too. I have to-day started a case on arsphenamine in severe dysentery.

DR. MCCLLOUD (St. Paul): I know very little about *entamebæ* but have recently had occasion to review the literature on the subject. We recently had an applicant for insurance from Indiana giving a history of having had dysentery in 1924, amebæ in the stools, and he had lost 85 pounds. After taking three bottles of stovarsol, his symptoms all subsided, and he was pronounced cured.

The question arises, is he now insurable at standard rates? I was granted access to a book on tropical diseases published by the United Fruit Company, who maintain nine hospitals in South and Central America and who, of course, have had a wide experience in the treatment of this disease. They have tried stovarsol but have come to the conclusion that it is no more effective than the bismuth and emetin treatment as used by Dr. Deeks, who is Medical Director of the United Fruit Company.

I have read Drs. John and Jamison's articles and do not gather that they regard this as a specific remedy. Tice, commenting thereon, states that they have found in stovarsol a harmless remedy for amebic dysentery that compares quite favorably with anything previously employed.

I wonder if any one can tell me the complications to be expected in these cases. I am thinking especially of liver complications. We meet this question very rarely in insurance, but it would be interesting to know what complications we might expect.

DR. HEAD: It is important to remember, in connection with these cases of amebic dysentery, that many times, for some reason or other, they show very pronounced improvement no matter what treat-

ment they are put upon. I remember some years ago I had an opportunity of watching over a number of years a veteran from the Philippines in the Spanish-American War, in whom exacerbations and remissions in the disease were very pronounced. At various times we thought we were accomplishing a good deal with the special medication that was being used, but finally came to the conclusion that what we did did not have very much to do with the remissions. The patient would have a period of relief, and then the exacerbations would come on again at certain intervals.

It is well to remember that, pathologically, these amebæ are imbedded very deep in the walls of the colon. It never seemed reasonable to me to be able to kill them out in the tissues without actually killing the cells of the bowel itself. Unless one has a rather large number of cases to observe it is best to remember that we may have remissions in the disease, and, therefore, our therapeutic conclusions may be erroneous.

DR. DRAKE (in closing): After the war I had a chance to see several cases of dysentery. One developed liver abscess, which Dr. Colvin operated on with recovery. I had occasion to look the subject up at that time. I had an acute case a year ago at the Ancker Hospital, which cleared up beautifully under emetin bismuth iodide by mouth and emetin hypodermically.

In this case reported to-night I tried emetin, the Mexican drug called *chapparo amargosa*, and bismuth by the pound. After I had treated her for about four months she was so emaciated that I thought she was going to die. Her improvement under stovarsol was so marked that I thought the case worth reporting. I realize that she probably has amebæ still present but stovarsol has proved so much better than any other medication that I feel it was quite worth while.

Dr. W. A. Jones (Minneapolis) read a paper entitled "A Review of the Modern Studies of Mental Diseases."

Dr. E. L. Tuohy (Duluth) gave a lantern slide talk, with slides of x-ray plates and case reports, entitled "Some Features in the Diagnosis of Chest Conditions."

#### ABSTRACT

1. Discussion relative to foreign material entering the lungs via the bronchi. Reference to the usual foreign bodies. The influence of age, decrepitude, throat malignancy, dusting powder inhalation, and recurrent laryngeal interference in goitre surgery, aortic aneurysm, and general mediastinal invasion.

2. The present status of lipodal injections; also of croneoscopy. Demonstration of instruments used.

3. Is there such a thing as absolutely diagnostic films of pulmonary tuberculosis?

4. A showing of definite enough TBC films.

5. M.K. No. 50338. Male, age 5 years.

Comment: Here was the story and a Roent-

gen film that certainly did not suggest in any way pulmonary tuberculosis. However, the tuberculous lobar pneumonia is easily enough explained when we see the autopsy findings and the unusual results of hilus-gland caseation. There are, no doubt, so definite and consistent classical shadows shown on many films as to make any other diagnosis than tuberculosis quite unthinkable. However, we should conjure with the opposite view, and assume that the Roentgen film "can always be diagnostic"; in other words, that it is anything more than an amplification of the infection.

6. Pneumothorax; what a segment of chest looks like without any lung in it.

H.J. No. 43926. Male, aged 32, furrier.

Comment: Thus, we had here no history of previous illness, no unusual strain, no accidents. We have records now of eight such patients, in all of whom complete recovery took place. Indeed, one individual had three such attacks, unilateral, all with recovery. There seems to be an attitude in the minds of many good clinicians, which has not outgrown the stage corresponding to the musical development of General Grant: he stated, on occasion, that so far as he was concerned there were only two tunes: the one was "Yankee Doodle" and the other was not. So with tuberculosis: in too many minds any chronic lung condition must be tuberculosis.

7. Empyema and pleuritis; the masking influence of the latter.

M.B., No. 42249. Male aged 38, laborer.

Comment: This is introduced purposely to show that a diffuse shadow, looking like "pleuritis," "a thickened pleura," or a chest supposedly full of fluid, may mask many things. Not the least in this masking is a basic malignancy, as shown here, an obvious blocking of bronchial drainage, and most of the signs that came thereafter were only a complication of the real pathology concerned; that is, carcinoma of right bronchus, metastases into pancreas.

8. One of the confusing and not uncommon pictures seen in mineralization of the lung.

Comment: A description of this case is not introduced because it was of no particular moment. The man had been a worker in the mines both of England (tin) and in our own country, in quarries and elsewhere. Suffice it to say that the Roentgen films, while showing a little tendency to fibrosis, gave the extensive mottling that would strongly suggest miliary tuberculosis.

9. Our accumulating knowledge of the Roentgen pictures of bronchopneumonia.

Miss A.O., No. 91127. Female, age 20, student.



Was this a slowly resolving pneumonia? What is the course, clinical and pathological, of "chronic" interstitial pneumonia or Corrigan's cirrhosis of the lung?"

Comment: This record is introduced with the showing of three slides of Roentgen films, to show a graphic return to normal after the protracted period of three months, with a series of lung shadows extraordinarily indicative, in their placing and character, of tuberculosis. As our knowledge of the Roentgen evidence of bronchopneumonia enlarges, it teaches us to be very conservative in the interpretation of certain shadows.

10. It is essential and fairly easy to dispose of the gross subjective Roentgen lung findings in metastatic malignancy.

Comment: A series of four lantern slides were shown, giving the rather large, sharply circumscribed shadows in the Roentgen films of lungs of patients with malignancy in the pelvis and testicle. Such need only be seen to be easily disposed of.

11. But a comparison of miliary metastases (pulmonary) and miliary TBC of lungs renders a differentiation almost impossible.

P.C., No. 51166. Male, age 50, Italian, laborer. (Autopsy showed the primary carcinoma to be in the stomach.)

Comment: The lantern slide of one other instance of miliary carcinosis of the lungs, from a primary carcinoma from the pylorus, was shown together with two accepted and proven instances of films from the lungs of cases of miliary tuberculosis. It was pointed out that with two lanterns in position and projecting these contrasting films - the one of miliary tuberculosis and the other of miliary carcinoma—upon the same screen, careful observers were not able to distinguish which was the one and which was the other.

12. Primary Carcinoma of the Lung \* is not uncommon. (Hodgkin's and allied lymph gland malignancies are quite frequently encountered.)

(a) Primary carcinoma of the lung is not uncommon.

(b) Signs and symptoms are not definite and suggest TBC.

(c) Physical findings are usually unilateral—thus differing from well-established tuberculosis.

(d) Cough is harsh and persistent, often non-productive; and hemoptysis not rare.

(e) Constitutional depression is continuous and persistent.

(f) Roentgen-ray does not yield early evi-

dence; the bronchoscope may.

(g) Postmortems done routinely, where so frequently refused in chronic indefinite disease, frequently demonstrate its presence.

Mrs P.F.S. No. 25377. Female, age 48, housewife.

Comment: In a series of slides of lung tumors this is introduced first, because, while it seems to evidence definite pressure signs indicative of malignancy, the patient has already gone a considerable length of time (nearly three years) and appears to be in excellent health. Is it a benign tumor or semibenign tumor, arising from the pleura, or even originating from a rib? The literature is somewhat obscure, and those who write on the subject of lung tumor are not inclined to believe that there are many benign tumors within the thorax.

G. B. No. 26440. Male, age 44, laborer.

Comment: This case is introduced to draw notable attention to the fact that even where a proven diagnosis of tuberculosis can be made it does not always exclude malignancy. Unless heroic efforts had been made to get an autopsy on this patient, the original contention that he had malignancy would have been supposedly disproved; and again a chronic disorder, accompanied by cough, would have been classified as a primary tuberculosis. Indeed, the remark of Moses, quoted above under "G," deserves our attention.

Mrs. A.A. No. 21112. Female, age 26, housewife.

Comment: This is another instance of malignancy (though unproven by autopsy) which cannot be very well questioned, when one considers the degree of pain the patient endured and the rapidity of the process. Nevertheless, note that in the beginning the shadow suggested to her doctor a purulence or fluid accumulation rather than a tumor.

13. Let us not forget the lung hilus; but even more, the mediastinum, with its indefinite boundaries but enormous capacity for crippling the heart when diffusely invaded.

A.S. No. 35473. Male, age 49, Finnish, ship-builder.

Comment: This history is introduced because it bears out the contention often read in the literature commenting upon the tendency for carcinoma of the bronchus to give metastases into the vertebral column. In this degree it shares the same propensity probably equally with carcinoma of the thyroid. In either case the steps involved may be fairly silent: in the one, a tumor growth has appeared and developed within the

\*Moses, Henry M., Kings County Hosp., Brooklyn, N. Y., Amer. Jour Med. Sci., 1925, p. 102.

chest to a surprising degree before it is found; in the latter, a long carried and apparently innocent looking goitre suddenly takes on changes involving extreme hardness, and the next step may be the dreaded metastases of the spine.

14. Chronic interstitial pneumonia (Corrigan's cirrhosis). Not a specific lung disease. A fibrous C.T. shrinkage, rarely bilateral. Best known by its antecedents and associated pathology. These include pneumonia, pleurisy, pneumoconiosis, bronchiectasis, syphilis, acute aneurysm, and malignant tumors of lung and bronchi. The signs are masked, and generally progressive. Lung shrinkage ensues, dyspnea, heart displacement, clubbing of fingers, heart dilatation and cyanosis.

Allbutt and Rolleston's series gives excellent review, even though now relatively old. In a series of 21,317 autopsies there were found from the years 1857 to 1906, 46 cases of "pulmonary fibrosis." They were divided into six groups, and, interestingly, a large group of eleven was due to bronchus occlusion.

Note: The pathologists are wont to assert that so-called "unresolved pneumonias" are prone to show at autopsy "chronic pneumonitis" or Corrigan's cirrhosis. If this is a correct observation, clinicians must become more familiar with chronic fibrosing non-tuberculous lung lesions.

15. A brief reference to a heart case.

W.J.H., No. 52287. Male, age 37, advertising manager.

Pathological specimen shown (syphilitic aortitis). Autopsy showed almost total closure of coronary ostia; also, curiously, a near closure of the opening of the innominate artery (in exactly the same manner) as it left the aorta.

Note: With this singularly healthy appearing subject, might the evidence be fairly adduced that the fact that he came originally from Minneapolis indicate the etiology involved? Or should one consider of more importance the fact that he lived in St. Paul?

#### DISCUSSION

DR. S. M. WHITE (Minneapolis): I only want to take occasion to repeat by way of emphasis what Dr. Tuohy says about the diagnosis of tuberculosis and the realization to which we are coming of the frequency with which chronic disorders of the lung, even with cavitation, are found to be non-tuberculous. Our tendency has been to suspect that everything with hemorrhage was tuberculous in origin and we must still bear that probability in mind; but with cavitation, if the sputum is negative on repeated examination, we have often proved that we are dealing with a non-tuberculous condition. Pathologic changes seen through the bron-

choscope may reveal that we are dealing with bronchiectasis or some other non-tuberculous condition.

One other point interested me in that particular relation and that is the difficulty that occurs in diagnosis of carcinoma of the bronchus in differentiating from tuberculosis. It brings out what Dr. Tuohy said concerning *x*-ray examination. We are too prone to do two things; that is, (1) to accept the roentgenologist's diagnosis; (2) not to follow with excessive enough care all other methods of diagnosis. Carcinoma of the bronchus has in my experience been repeatedly diagnosed by roentgenologists as tuberculosis. I think the reason for that confusion lies in the infrequent occurrence of carcinoma involving the upper portions of the lungs where tuberculous shadows are more common. In bronchial carcinoma we may have extension of shadows to the periphery of the lung, regional lymphatic metastases of the lungs, carcinomatous growth, or possibly both; so unless very great care is used that confusion may lead to serious error.

DR. FARR (Minneapolis): I want to thank Dr. Tuohy for the splendid presentation of this subject and to mention the work of S. H. Schlueter and I. F. Meidlein of Western Reserve University in regard to the resistance of the lining of the lungs to foreign and even bacterial invasion. Their experiments were carried out upon dogs; there may be a difference in the human subject. It would naturally be a satisfaction to me should experimental work show that the insufflation of infected material is a common cause of post-operative lung complications. If so, such complications could best be prevented by the use of local anesthesia. Notwithstanding the fact that the lung does tolerate foreign materials to a certain extent, there are many recorded cases in which material that has previously been swallowed is found. From the practical standpoint, I believe that we must agree with the position taken in my book, that even though lung infections are often embolic in origin, such infections would be more easily combated if the lungs were not water-logged with infected materials from the mouth, nares, and stomach.

In malignant conditions of the throat, the onset would be insidious, and the lung would soon learn to tolerate the leakage, and yet it is significant that lung complications not infrequently follow these conditions.

In goiter cases it is different. Embolism is a rare sequel here. Injury to the nerves can be almost entirely eliminated by asking the patient to speak before incising the tissues.

The *x*-ray is of undoubted value, but the importance of interpretation cannot be too greatly stressed.

In closing I want to ask Dr. Tuohy if the gentleman with lues whose history was suspicious only because of the fact that he was reared in Minneapolis and was in business in St. Paul, had ever previously been in Duluth?

DR. HEAD: I would like to express my appreciation of these cases and mention one or two things that struck me as Dr. Tuohy was presenting them. One thing that ought to be well impressed on all our minds in relation to the mistakes in interpre-



tation of chest conditions, is this, namely, it is a very good idea not to examine the stereoscopic plates, or even do an *x*-ray, until you have done a very thorough physical examination of the chest. In other words, do not start your physical examination with a preconceived notion beforehand of what you expect to find. I believe in having those studies done independently. I think it is a good thing to fluoroscope the chest and study the plates, but I think it is a mistake for the clinician to have the roentgenologist's diagnosis before he has made his own independent observations. Like the French scientist's caution to research workers, I think the advice is good for physical diagnosis work, namely, in physical diagnosis one should be very careful not to find exactly what he is looking for.

Another thing I wish to emphasize; that none of the methods which are at hand should be looked upon lightly. We ought to avail ourselves of all the information we can secure and try and reserve our judgment as to what is there until we have all our findings on hand. Some of us are liable to jump to conclusions, to over-emphasize one special finding that experience has taught us is of considerable value, and are likely to arrive too quickly at a conclusion which may warp our judgment. If we can hold steady and wait until we have all the evidence at hand we will save ourselves many a diagnostic error.

I have often thought that when we have presented such a clear-cut diagnosis from the roentgenologist, without regard to the history of the case, and studied from only one point of view, that it would be a fine experience if the roentgenologist could be found more often at the autopsy table. I know that especially impressed me in the Army Hospital at Camp Wheeler, Macon, Ga. We would have sometimes eight or ten autopsies daily, and I do not remember ever seeing a roentgenologist at one of them to observe whether the *x*-ray interpretations made by him were correct. I wonder whether these men are checking up their findings pathologically. Therefore, until they have made a more careful study of their diagnoses from the pathological studies, I am not so sure that we should pay so much attention to their diagnosis.

DR. TUOHY: I wish to thank these men for their comments. It is difficult to cover such a big field in a short space of time.

Apropos of what Dr. Farr said as to the experimental work of others, it seemed to me that the position of the patient in this work made a great deal of difference. Under some circumstances a great deal gets down into the lung.

CARL B. DRAKE, M.D.

Secretary

## PROCEEDINGS OF THE MINNEAPOLIS CLINICAL CLUB

Meeting of January 20, 1927

The regular meeting of the Minneapolis Clinical Club was held at the Elks Club on Thursday evening, January 20, 1927. Dinner was served at 6 P. M., and the meeting was called to order by the President, Dr. R. C. Webb, at 7 P. M. There were twenty-two members and two visitors present.

The minutes of the December meeting were read and approved.

Upon ballot the following men were elected to membership in the Club:

Dr. H. B. Hannah  
Dr. C. A. McKinlay  
Dr. D. D. Turnacliiff

The President then called upon Dr. Moses Barron to give a short talk on his trip abroad. Dr. Stanley R. Maxeiner, newly elected President of the Hennepin County Medical Society, was also asked to give a talk.

The scientific program of the evening consisted of the following:

1. Dr. T. A. Peppard reported two cases of Stokes-Adams' syndrome treated with barium chloride.

2. Dr. F. W. Wittich reported briefly a case of multiple myeloma in a man thirty-three years

of age, and asked Dr. Walter Ude to show the *x*-ray films taken in the case.

### DISCUSSION

DR. UDE (by invitation): The case was referred to us as an ordinary chest case. The clinical diagnosis was "possible pleurisy of the diaphragmatic type." The chest itself does not show anything unusual. The characteristic findings in the ribs, scapulæ, and clavicles are very well shown. There are multiple punched-out areas involving the myelogenous tissues. In the anterior portion of the fourth left rib there is a peculiar expansion of the cortex. This resembles to some extent the appearance which one would look for in chondrosarcoma, but is probably associated with trauma. We checked the other bones in the body shortly after the diagnosis on the chest was made and found the same appearance in the skull and also in both humeri and in the pelvis. I do not think the tibia and fibula or the bones of the hands show involvement, which rules out chondromatosis or multiple bone cysts.

DR. ALLISON: We have had about twelve cases of multiple myeloma, and on only one did we try the *x*-ray. That was very extensive. Both femurs were involved. We treated one femur and let the other go untreated. We gave moderate treatments at first and then deep rays, and there was not the slightest effect. Did you get an *x*-ray of the spine?

DR. UDE: No, I did not.

DR. ALLISON: The most typical changes are seen in the spine in these cases, but the changes in the skull and ribs are typical here.

DR. UDE: We did not study the complete spine. (This was later done at Rochester, and the same lesion was demonstrated.)

3. Dr. J. C. Michael reported a case of total unilateral left ophthalmoplegia in a woman, aged 70. The lesion in this case was definite peripheral in type. No roentgenogram was obtainable before the time of report. Other neurologic findings were objectively negative throughout. The patient suffered severe persistent pain in the left orbit and left frontal region. The case was thought to be one of aneurysm of the middle cerebral artery.

4. Dr. H. M. N. Wynne showed a specimen of myoma of the uterus on which he had operated that morning.

Dr. J. M. Lajoie requested that his paper on Hypertension be postponed in order that the visiting speaker of the evening might have more time.

5. Dr. Joseph Cochran (by invitation) gave an informal, but very interesting, talk of his experiences during the past six years as a medical missionary in Persia. Dr. Cochran also had numerous pictures which he showed the members of the Club.

At the close of this talk a motion was unanimously carried that Dr. Cochran be extended Associate Membership in the Minneapolis Clinical Club during his stay in Minneapolis, for which courtesy Dr. Cochran thanked the members of the Club.

The meeting adjourned.

DONALD MCCARTHY, M.D.  
Secretary

## MISCELLANY

### IN MEMORIAM

#### DR. OSCAR HERMAN URSTAD

Dr. Oscar Herman Urstad was born in Christiana (now Oslo) Norway, on December 24, 1870. At the age of 18 he left his native land and came to New York, later going on to Lake Mills, Iowa, where he held a clerical position in a drug-store. In 1896 he began the study of medicine in Central College of Physicians and Surgeons, Indianapolis, Indiana.

He came to Kiester, Minnesota, in 1900, where he practiced medicine and surgery for 20 years. He did his own surgery, owning and operating a small hospital. In 1920 he sold his practice to Dr. A. J. Henderson and moved to Minneapolis, Minn., where

he became associated with Dr. C. J. Ringnell until the latter's death. He was on the staff of the Swedish Hospital at Minneapolis.

He moved to East Stanwood, Washington, in 1924, where he established a large practice.

Dr. Urstad was an active member of medical societies. While at Kiester he was a member of Blue Earth Valley Medical Society, Minnesota State Medical Association, Southern Minnesota Medical Association, and the American Medical Association. At Minneapolis he joined the Hennepin County Medical Society. At East Stanwood he was affiliated with the Snohomish County Medical Society.

In 1907 he went abroad for further study and took a postgraduate course at the Laege Kursus District, Norway. During the World War he was commissioned Captain in the Medical Corps being stationed at Green Leaf, Georgia.

In 1921 he suffered from encephalitis lethargica being a patient at the Swedish Hospital for several weeks but made an uneventful recovery.

Dr. Urstad was active in civic and religious work, being interested in any constructive enterprise which was for the good of the community. He was mayor at Kiester for several years, and served on the local school board at that place.

At Minneapolis he was a member of the Calhoun Commercial Club, the Odin Club, and was associated with the Scottish Rites of Masonry and the Shrine. He was a trustee of the Central Lutheran Church. At East Stanwood he joined the Kiwanis and was a member of our Saviour's Lutheran Church.

He is survived by his wife, four children, and his aged parents. His two daughters are nurses, and his two sons are at present at St. Olaf College, Northfield, taking the pre-medical course there.

—A. J. HENDERSON, M.D.

### ADDRESSES AT THE NORTHWEST CONFERENCE ON CHILD HEALTH AND PARENT EDUCATION

The addresses given at the recent Northwest Conference on Child Health and Parent Education in Minneapolis will be published in book form at an estimated cost of two dollars. Advance subscriptions are invited, subscribers using the attached form.

The educational influence of this Conference may be widely extended by the individual or group study and discussion of these addresses, presented by a large number of leading authorities in Child Study and Parent Education.

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# THE JOURNAL-LANCET

Represents the Medical Profession of  
Minnesota, North Dakota, South Dakota and Montana  
The Official Journal of the  
North Dakota and South Dakota State Medical Associations  
The Hennepin County Medical Society  
The Soo Railway Surgical Association  
and The Sioux Valley Medical Association

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MAY 1, 1927

## THE MINNESOTA BASIC SCIENCE BILL

The Minnesota Legislature at its last session and after much tribulation and opposition passed the Basic Science Bill in the House, 111 to 7, and in the Senate 61 to 2, but this does not indicate at all the opposition that the bill had. Possibly the fairest way to figure it is by those voting against the first amendment proposed by the opposition in the Senate, which was 45 to 27. All those voting for that amendment can only be considered enemies of the bill. In the House only those can be considered friends of the bill who voted against the first amendment on which the roll call was 73 for it and 30 against it. The final vote as shown up was simply a matter of the fellows climbing on the bandwagon, and when they saw they could not kill or change the bill they voted for it, with a few exceptions as noted, but we do not give them any particular credit for it because, if they could have killed the bill, they would have done so, as voting for those amendments would have killed it or destroyed its efficiency.

It provides in the first place for three very important things: primarily, to establish the qualifications of the healer; secondly, it provides for a special board of examiners, and thirdly, it requires the registration of all those who practice the healing art. In order that a person may be

registered under this law, he must be well informed in the so-called Basic Sciences consisting of anatomy, physiology, pathology, bacteriology, hygiene and after 1931 also chemistry. This is provided for by the appointment of a board of examiners in the basic sciences composed of five members, two full-time professors from any recognized university or college in the state, and, as amended in the Senate, one medical man, one chiropractor and one osteopath. The third important provision provides for the registration of all licensed medical men, chiropractors and osteopaths with the Basic Science Board, and their certification to their respective Licensing Boards by the Basic Science examiners in order that they may be privileged to be examined for licensure by their own respective board, and will thus put all applicants for the practice of healing on a general fundamental basis. It also provides that these practitioners must before October first register with their respective boards and pay a fee. This fee goes to the board with which they register. Besides, they are registered with the clerk of court, etc., and the State Board of Health is required to send a list of men duly licensed to the sheriffs and county attorneys and also to the Boards of Health throughout the state.

Minnesota was one of the earliest states to put through a Basic Science Bill in one session of the legislature and with such an overwhelming vote in its favor. Similar bills have more recently been put in force in a few other states and notably Wisconsin and Washington. In Wisconsin, our neighboring state, it took nearly five years to get it through the legislature, and even after it was passed there was a legal controversy as to its constitutionality, but it was finally firmly established as a permanent law, so that Minnesota is to be congratulated on the speed with which it put this bill into operation, and it has already been signed by the Governor.

The Senators and Representatives were overwhelmed with letters from the surrounding country vigorously opposing the passage of the bill, but owing to the activity of the medical profession and especially the chairman and the State Legislative Committee and the various members of the Association over the state, they succeeded in convincing the Senators and Representatives that the measure was a sound one and that it would react to the betterment of all who were engaged in the "practicing healing" and the "practice of healing" and all would be amply protected for the reason that it would put all of the men engaged in the healing art upon a foundation up-

on which they could work and upon which the people could rely.

Very naturally the bill created a very bitter feeling in its opponents, who feared that it was an effort on the part of the medical men to eliminate the osteopaths and the chiropractors; that is, this feeling was engendered by many of letters which were written with many misunderstandings of the provisions of the bill and furious opposition on the part of the cults and friends of the cults. Had these people known that this bill is a genuine effort to elevate the members of the healing practice, and had they been a little more careful in studying the provisions of the bill, they would not have been so much opposed to it.

The chiropractors and osteopaths fought this bill bitterly, and evidently did not want it under any consideration, with possibly some few exceptions. We did not get the board that we wanted to get. Legislation is always a compromise, and after all probably in the end this board will work out all right, because they will likely not get by this board if properly constituted any easier than they would get by another board if properly constituted and honestly managed, and with these men on the board the friends of all the different cults cannot charge it to the medical profession if their men who are not properly trained fail to get by. Consequently there will be less reaction against the medical profession. If this board does not prove to work out satisfactorily, the bill can be amended at some future session so as to put in a board that will be satisfactory. The bill as a whole was not crippled, and it has more teeth in it against quacks and those that have no license to practice anything than any medical practice act ever passed in the United States.

One of the things that surprised everybody was that the Naturopath Bill was passed by the House and voted for by some that we know, if they had looked into it, never would have done so. It shows how legislation is sometimes rushed through without being given proper consideration, and it seems to prove that if you have something that leans towards fakery or is fraud they can sometimes slip it by if it is not watched, while it takes all kinds of effort to put through real, constructive legislation. It is hard to explain these matters. The Naturopath Bill was finally killed in the Senate, but it took a good deal of hard work to do so and it was not killed until the very last night of the session, and was killed because it was prevented from coming up.

Now that the bill has passed, the feeling of op-

position will gradually disappear, and we have heard from all parts of the state that the physicians are quite well satisfied with the bill as it passed. At least, we got, as a whole, a good bill. THE JOURNAL-LANCET believes that we shall see a better feeling all around that will redound to the benefit of our patients and the interest in medicine and healing.

Herein is inserted a clause from the bill which defines one of its principal features:

"Practicing Healing" or "Practice of Healing" as used in this act unless otherwise specifically defined, the same shall be understood and construed to mean and include any person who shall in any manner for any fee, gift, compensation or reward, engage in, or hold himself out to the public as being engaged in, the practice of medicine or surgery or the diagnosis, analysis, treatment, correction or cure of any disease, injury, defect, deformity, infirmity, ailment or affliction of human beings or any condition or conditions incident to pregnancy or childbirth or who shall for any fee, gift, compensation or reward, suggest, recommend or prescribe any medicine or any form of treatment, correction or cure therefor; also any person or persons, individually or collectively who maintains an office for the reception, examination, diagnosis or treatment of any person for any disease, injury, defect, deformity or infirmity of body or mind, or who attaches the title of Doctor, Physician, Surgeon, Specialist, M.D., M.B., D.O., D.C., or any other word, abbreviation or title to his name indicating or designed to indicate that he is engaged in the practice of healing.

This ought to eliminate the quack element we have had to contend with and to put all men on a common basis so that they may put after their names their various titles and methods of healing.

This bill, of course, does not interfere with those who are already in practice and in no way deprives anyone of his constitutional rights.

## MEDICAL LEGISLATION

In Minnesota the medical practice act was amended so as to make it one of the best acts in existence. The principal changes are that the Councilors of the State Medical Association recommend to the Governor the candidates for membership on the Medical Examining Board, and also it gives the board a lot more power for revoking licenses for various reasons, and it is quite specifically stated in the bill.

The passage of the Basic Science Bill means that the schools of chiropractors and osteopaths will have to raise their standards if they are going to co-operate, and that the men must know the fundamental sciences before they can practice any method in healing. In this bill, too, we have the suggestion that there will be a general raising of the standard of medical education, and



it is quite in line with the establishment of osteopathic and chiropractic colleges. In Illinois, as we have said before, the chiropractors are employing physicians and laboratory men to teach the basic sciences while they still teach their own method of healing. They have in Texas, Chicago and other cities large schools for chiropractors, and they have adopted the fundamental or basic science provisions that are almost equal to the standards of the students who enter a regular qualified medical college, according to their catalogues. In fact, in Texas they go much beyond many of the other states. They would increase the number of years of instruction, as the osteopaths have done for some time, making a four-year course and will entirely eliminate the colleges which rely upon a short course of instruction, or, as one of them does, calling a half hour one hour, so as to increase the number of hours that the student must attend to fill out these required studies. The Basic Medical Science Bill will also add greatly to the endeavor of the other schools that maintain a much higher standard.

Then, too, in the Concentrated Lye bill which passed the Legislature two or more years ago, Minnesota was among the first states to adopt the suggestion of the American Medical Association and its position in the matter of the sale of concentrated lye. This was done in an effort to prevent accidental poisoning and has proved highly beneficial.

Minneapolis must be given some credit for the adoption of a measure which requires the testing of the hearing acuity of all pupils in the public schools. This has been very successfully carried out in the last year and has brought to light that many of the children in the public schools were suffering from defects in hearing, and this, together with examination of the eyes, has been a very providential measure and has often lead to the improvement of the children who are suffering from defects of ears, as well as defects of vision. A staff of men have given their time to this work and have done it in a conscientious manner so that most of the pupils, and certainly more of the parents, have been very much impressed with the necessity of such examinations.

All of these measures have been supported by the medical profession of Minnesota, but naturally the activity of a few of the men who have given much time to the development of medical laws deserve equal credit.

Again we feel that we must call special attention to the able efforts and time given by

Dr. H. M. Johnson of Dawson, Dr. Charles Bolsta of Ortonville, Dr. C. B. Wright of Minneapolis, Dr. J. T. Christison of St. Paul, Dr. S. H. Boyer of Duluth and Dr. L. Sogge of Windom, all members of the State Legislative Committee, and Dr. E. A. Meyerding, Secretary of the Minnesota State Medical Association. They have all spent a great deal of time in St. Paul with a number of other interested workers explaining these different measures to the legislators, and we would like to mention the names of others. But it must not be forgotten that this bill could only be passed by the aid and assistance of the Legislative Committees throughout the state and the united effort of the medical profession, some of whom have taken a special interest and done a great deal of work, who were not members of any committee.

It is quite evident that the medical profession has become better organized than ever before and probably further attempts will be made to make it a more definite organization, and from year to year their knowledge of matters pertaining to legislation will increase. It has been said that Iowa possesses perhaps the most highly organized body of medical men in the country, and that they practically dominate the passage or rejection of all bills pertaining to medicine.

In a brief summary of the big bills that were passed during the past session of the Minnesota Legislature the Basic Science Bill stands as the fifth bill of importance. Then, too, the Legislature passed a bill creating a board of examiners for massage operators, a very worthy and a well adjusted measure, so that probably hereafter we shall have a better class of masseurs and masseuses.

Some of the bills that failed include the "Anti-Evolution Bill," which was a spectacular gesture brought up in the Legislature and very promptly defeated, as Minnesota had no desire to follow in the footsteps of Tennessee.

They also failed to pass the bill for a waiting period for marriage licenses which was very unfortunate, for such a bill would probably lead to a study of eugenics. It failed also to pass the whipping-post bill for minor crimes. This bill has been in operation in Rhode Island for many years, and it is commonly noted that the man who knows he is going to be whipped at the post hesitates before he commits a crime. However, these may be taken up later and either modified or renewed in one of the hoped-for Commissioners' suggestions.

One of the important bills that passed, however, was the modified Baume's law for habitual

offenders and also the bill for creating a bureau of criminal identification. Both of these measures will have much to do with the recognition of types of criminals, and will doubtless in time lead to the establishment of a board whose business it shall be to examine the so-called defective class, the constitutionally inferior class who commit crime.

One of the important things that Governor Christianson has approved was the appropriation of \$25,000 a year for two years for research work in the University Medical School.

THE JOURNAL-LANCET wishes to extend its congratulations to the Legislature of Minnesota for what it has already done, with the hope that it may promote the study of many of these subjects which have to do with the safety and comfort of the people.

## NEWS ITEMS

Dr. E. O. Church has moved from Revillo, S. D., to Big Stone City, S. D.

Dr. C. A. Walters has moved from Platte, S. D., to Belle Fourche, S. D.

Dr. Frank I. Putman has moved from Sioux Falls, S. D., to Ellensburg, Mont.

Dr. T. E. McGouvran has become associated with Dr. J. P. Greaves, of Sherwood, N. D.

Dr. B. L. Pampel, of Livingston, Mont., was elected President of the Montana State Board of Health, last month.

Dr. Hamline Mattson, of Minneapolis, has accepted a position on the staff of the Mayo Clinic, and will move to Rochester.

The Sioux Valley Medical Association will hold its midsummer, which is also its annual, meeting at Sioux Falls on June 8.

Dr. A. C. Strachauer, of Minneapolis, gave a lantern slide talk on "Cancer of the Rectum" before the Ramsey County Medical Society on April 25.

Dr. Allen K. Krause, of Baltimore, gave a Mayo Foundation lecture in Rochester on the evening of April 7. His subject was "Histogenesis of Tuberculosis."

Dr. John A. Lyng, of Minneapolis, accompanied by his wife and son, has gone to Europe. He will visit the principal clinics and will be gone several months.

The headquarters of the Minnesota delegation

to the Washington meeting of the A. M. A. will be at the Hotel Hamilton, corner of K and Fourteenth Streets, Washington.

Dr. Wm. B. Roberts, of Minneapolis, leaves in May for some months study in the medical centers of the Continent and England. He will resume his practice in the fall.

Dr. Estes Hargis has returned to Rochester from traveling abroad on the J. William White scholarship, and will spend several more months on service in The Mayo Foundation.

Dr. M. W. Kemp, senior physician of the Michigan State Hospital at Newberry, Mich., has been appointed Assistant Superintendent of the Minnesota State Hospital at Fergus Falls.

The Medical Department of the University of North Dakota, with its two-year course, cannot take care of the students from outside states who apply for admission in large numbers each year.

Dr. W. J. Hewson, a member of the staff of the St. Peter State Hospital for the past two years, has been appointed Assistant Superintendent, to succeed Dr. George L. Freeman, recently resigned.

The Eitel Hospital, of Minneapolis, last week graduated a class of twenty-six nurses, its largest class for a number of years. Their graduates at once find lucrative private practice or executive positions.

Dr. Edith L. Potter, of Minneapolis, a 1924 graduate of the Medical School of U. of M. has gone to Europe for special study in Vienna. She was accompanied by Dr. Charlotte J. Calvert, of Madison, Wis.

Dr. E. J. Palomeque has been granted a leave of absence of six months from his fellowship in The Mayo Foundation. He will spend several months visiting clinics in Europe before his return to Rochester.

Dr. H. R. Diessner, of Waconia, will join his son, Dr. H. D. Diessner, of Minneapolis, in an extended trip to Europe, leaving this month. They may spend several months in the clinics of Berlin and Vienna.

The Divide County Community Hospital of Crosby, N. D., opened its doors to patients last month. Its building is a thoroughly modern hospital structure, and is owned by the people of Ambrose and Divide Counties.

Dr. Henery E. Michelson, Director of the Division of Dermatology of the University of



Minnesota, has returned from two weeks spent in New Orleans visiting Tulane University, and the government leprosy hospital at Carville, Louisiana.

Dr. H. J. Prentiss, Professor of Anatomy, University of Iowa, gave a Mayo Foundation lecture in Rochester on the evening of April 15; his subject was "The Female Perineum." On the afternoon of April 16 he gave a lecture on "The Male Perineum."

Dr. J. F. D. Cook, Superintendent of the South Dakota State Board of Health, has notified County Boards of Health in that State that they were given by the last legislature control over sanitary matters relating to schools of their respective counties. The law becomes effective June 1.

Dr. Leslie P. Anderson, of Minneapolis, was married last week to Miss Edith M. Richards, of Newcastle, Ind. Dr. Anderson is a graduate of the Medical School of the University of Minnesota, class of '25, and Mrs. Anderson is a graduate of De Pauw University. Dr. and Mrs. Anderson are at home at 2709 Blaisdell Ave., Minneapolis.

The Glen Lake Sanatorium (Hennepin County's tuberculosis sanatorium) has been given the certificate of standardization by the American College of Surgeons hitherto given only to hospitals that maintain a certain standard in their work in the matter of regular staff meetings, records, etc. It is a distinguished honor for the Glen Lake institution.

In a news item in our issue of April 1 (page 161) the statement was made that the number of mothers who attend the Infant Welfare clinics of Minneapolis was 14,510. This was the aggregate number of babies in attendance on the clinics in 1926, the Executive Secretary of the Infant Welfare Society informs us. The number of babies in attendance during the year was 3,062.

Dr. Daniel L. Seckinger, Johns Hopkins, 1924, who for the past year has been house physician at St. Mary's Hospital, Pierre, South Dakota, has been appointed on the City Board of Health Survey at Savannah, Georgia. He left for that point on April 11. Dr. George S. Levitt, recently of the University of Minnesota Hospital, has been appointed in his stead and has assumed his duties.

The following physicians and members of their families in this territory have already registered

for the foreign trip of the Inter-State Post Graduate Assembly of North America: Dr. and Mrs. J. G. Erickson, Minneapolis; Dr. and Mrs. C. L. Larsen, St. Paul; Dr. E. T. Lindgren and Miss Peggy Lindgren, Duluth; Dr. J. William Parker, St. Mary's Hospital, Rochester; Dr. H. J. Thornby, Moorhead, Minn., and Dr. J. H. Garberson, Miles City, Montana.

The program of the Minnesota State Medical Association for its annual meeting in Duluth on July 1 and 2, will contain the names of an unusual number of distinguished men, including the following: Abt, Harris (M. L.), and Mock, of Chicago; Hickey, of the University of Michigan; Middleton, of the University of Wisconsin; Polak, of the Long Island College Hospital; Major, of Kansas City; Mayo (C. H.), of Rochester; and others. Joint meetings, with papers and symposiums, and clinics will be held.

#### PROGRAM OF THE NORTH DAKOTA STATE MEDICAL ASSOCIATION—40TH ANNUAL SESSION AT GRAND FORKS, N. D.

June 1st and 2nd, 1927

Wednesday, June 1st

9:00 A. M.—President's Address. N. O. Ramstad, M.D., Bismarck, N. D.

9:30 A. M.—R. E. Pray, M.D., Valley City, N. D.

##### Intercostal Neuralgia

Stressing recent special research

10:00 A. M.—J. O. Arnson, M.D., Bismarck, N. D.

L. W. Larson, M.D., Bismarck, N. D.

Dean Lewis, M.D., Baltimore, Md., Professor of Surgery, Johns Hopkins.

##### Goiter—Medical Pathological and Surgical

11:30 A. M.—Dr. Paul D. Mossman, Surgeon, U. S. A.

##### Trachoma

Demonstrating clinical cases with special reference to spread of the disease among our Indians

NOON RECESS

1:30 P. M.—Arthur Steindler, M.D., Professor of Orthopedic Surgery, State University of Iowa.

##### Arthropathies or Charcot Joints

2:15 P. M.—Dr. Frank E. Burch, Professor of Ophthalmology, State University of Minnesota.

##### Ocular Complications of Diabetes

3:15 P. M.—Frank L. Jennings, M.D., Associate Medical Director of Glen Lake Sanatorium, Oak Terrace, Minn.

##### Tuberculosis

4:00 P. M.—H. E. French, M.D., Dean of the School of Medicine, University, N. D.

##### Demonstration of Epiphyseal Lines

Thursday, June 2nd

9:00 A. M.—F. C. Rodda, M.D., Associate Professor of Pediatrics, University of Minnesota.

##### The Prevention of Acute Contagious Diseases in Children

10:00 A. M.—W. C. McVicar, M.D., Mayo Clinic, Rochester, Minn.

**The Diagnosis of Gastric and Duodenal Diseases**

William Carpenter MacCarthy, M.D., Head of Department of Pathology and Diagnosis, Mayo Clinic, Rochester, Minn.

**Clinical and Pathological Significance of Gastric and Duodenal Lesions with Pathological Exhibits**

11:30 A. M.—Wallace H. Cole, M.D., Head of the Department of Orthopedic Surgery in Miller Hospital and Twin City Shrine Hospital

**Fractures**

Demonstration of most approved methods of treating fractures

**NOON RECESS**

2:00 P. M.—William Boyd, M.D., Professor of Pathology in the University of Manitoba.

**The Pathology of the Anemias**

2:30 P. M.—E. W. Montgomery, M.D., Professor of Internal Medicine, University of Manitoba.

**Treatment of the Anemias**

3:00 P. M.—E. M. Hammes, M.D., St. Paul, Minn.

**Neuropsychiatric Manifestations Associated with Hyperthyroidism**

Hotel reservation can be made through Dr. J. P. Miller, Grand Forks.

**The Sixth District Medical Society of North Dakota**

The Sixth District Medical Society of North Dakota held a meeting at Bismarck last month, at which papers were presented as follows: by Dr. E. P. Quain, of Bismarck, on "The Practice of Gynecology and Obstetrics Among the Indians"; "Myocarditis," by Dr. H. A. Bodenstab, of Bismarck; "Actinotherapy," by Dr. S. H. Spielman, of Mandan.

**Annual Meeting of the North Dakota Academy of Ophthalmology and Oto-Laryngology**

The North Dakota Academy of Ophthalmology and Oto-Laryngology will meet in Grand Forks, May 31, under the presidency of Dr. A. M. Carr, of Minot. This will be the annual meeting of the society and includes the business meeting and a banquet for members and guests.

The Academy will have the pleasure of having Dr. Frank E. Burch, of St. Paul, appear as visiting clinician, at the scientific session.

**The Aberdeen (S. D.) District Medical Society**

The March meeting of the Society presented an unusually interesting program.

The following papers were given:

1. "Extrapleural Thoracoplasty for Tuberculosis." B. C. Murdy, M.D., Aberdeen, S. D. (With presentation of case.)  
Discussion led by R. D. Wilson, M.D., and J. O. F. Kraushaar, M.D., Aberdeen, S. D.
2. "Osteomyelitis." B. A. Bobb, M. D., Mitchell, S. D. (Illustrated with lantern slides.)  
Discussion led by Emil S. Geist, M.D., Minneapolis, and R. L. Murdy, M.D., Aberdeen, S. D.
3. "Certain Distinct Types of Renal Diseases and Their Treatment." Norman M. Keith, M.D., Professor of Medicine, Mayo Clinic, Rochester, Minn. (Illustrated with lantern slides.)  
Discussion led by C. E. McCauley, M.D., and J. L. Calene, M.D., Aberdeen, S. D.
4. "Fracture of the Hip." Emil S. Geist, M.D.,

Professor of Orthopedic Surgery, University of Minnesota, Minneapolis, Minn.

Discussion led by H. I. King, M.D., and J. D. Whiteside, M.D., Aberdeen, S. D.

The orthopedic clinic, given in the afternoon by Dr. Geist, was very successful, and about thirty-five cases were examined and treatment advised.

The meeting was well attended by medical men, nurses, and a few interested laymen.

R. G. MAYER, M.D.  
Secretary

**Registered Nurse Wants Position in a Doctor's Office**

Position wanted in Minneapolis. The best of references furnished. Address 351, care of this office.

**Minneapolis Location Offered**

A desirable location for a physician with a dentist is offered over a new drug-store on a busy street car line in Minneapolis. Address 347, care of this office.

**Good Opening for Physician**

This in a South Dakota town in the heart of the corn belt. Nothing to buy. A money maker from the start. Good roads, wealthy farming community. Address 343, care of this office.

**Office Position as Secretary Wanted**

By a thoroughly capable woman with large experience. Good stenographer and book-keeper. Large experience and best of references. Available June 1. Address 349, care of this office.

**Locum Tenens Wanted**

A physician is wanted to take charge of general practice in eastern South Dakota for four or five months. Rich farming community. I have made good here for the past ten years. Leaving about May first. Address 346, care of this office.

**Physician Wanted**

To locate in a city of 600 population in north central South Dakota, in a thriving agricultural community. Twenty miles to the nearest doctor. Office given free of charge. For further information address Secretary, Hosmer Commercial Club, Hosmer, S. Dak.

**Practice for Sale**

A \$6,000 cash unopposed practice in town of 500 in Northern Minnesota in Park Region district. Large territory, good school, fine roads, churches, hospital facilities near by. Came here 15 months ago in debt; now going to specialize. I dispense my own drugs. Asking \$500 for drugs and office equipment. Address 348, care of this office.

**Practice for Sale**

General practice in southern Minnesota town of one thousand. Here is a live growing practice in a good community. Can be had for the price of office equipment, which is the most up-to-date in this section. A \$10,000 practice, which will be a money maker from the start. Do not starve in the city. Snap this up. Sixty-five confinement cases last year. Price \$2,500 cash. For details address 350, care of this office.



# THE JOURNAL-~~L~~ LANCET

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## SOME PROBLEMS IN INTESTINAL SURGERY\*

BY NEIL JOHN MACLEAN, M.D., M.R.C.S. (Eng.) F.A.C.S.  
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Since the days of Lister, no revolutionary changes have been made in abdominal surgery. The aims of surgery have been, lowering the operative mortality and extending the operability in unfavorable conditions. This has led in several instances to operation in stages where the classical procedure in one stage would have resulted in a higher mortality. Thus, a cystotomy as a preliminary measure in the surgery of the prostate is in certain cases a life saving factor. A two-stage gastrectomy may be done with comparative safety where a one-stage operation might be disastrous; in thoracoplasty for pulmonary tuberculosis the one-stage operation has been almost entirely superseded by operation in two or more stages.

Multiple stage resection of the intestine was described by Greigg Smith in his work on Abdominal Surgery, Sixth Edition, 1897. In 1902, Mikulicz popularized the two-stage colectomy<sup>1</sup> for obstructive tumors of the sigmoid. This part of the large bowel being very mobile, lends itself readily to the two-stage operation. Since then operation in stages has been applied to parts of the large bowel other than the sigmoid, especially the transverse colon. Lately there has been a tendency to decry the two-stage method as unscientific, because in carcinoma of the colon

the lymph glands are not included in the part resected. By a modification of the method, however, and a further extension of the original principle, the primary and even the secondary lymph glands can be included in the resection of any part of the colon. Furthermore, the two-stage resection may be applied in certain lesions of the small bowel, and I have used it several times when conditions were unfavorable for immediate resection.

There are many pathological conditions that call for resection of part of small or large intestine. Associated with these lesions is an obstruction of varying degree from very slight to complete occlusion of the lumen. Whenever resection of the intestine is done there is a temporary mechanical ileus at the site of union. These two factors directly influence the surgical prognosis. In other words resection of the intestine is followed by a temporary obstruction from which the patient may or may not recover. The patient leaves the operating table relieved of the obstructing lesion, but with a super-added operative obstruction, which, though temporary, may last long enough to cause death.

The problems of intestinal surgery as encountered in everyday surgical practice are mainly those of intestinal obstruction or lesions, which, though not primarily obstructive, eventually cause obstruction. In the management of these conditions there are certain rules about which one can be dogmatic, but others are more controversial.

\*Read before the Western Surgical Association, Wichita, Kansas, December 19, 1925.

<sup>1</sup>While this operation is usually referred to as a two-stage resection, that is, an intraperitoneal and an extraperitoneal stage, there are in reality four separate steps or phases in the complete operation.

In a general way, intestinal cases can be classified under the following three clinical groups:

#### GROUP A

##### *Acute Obstructive Lesions.*

1. Small bowel.
  - a. Kinks and strangulations, relatively common.
  - b. Neoplasms, relatively rare.
2. Large bowel.
  - a. Twists and strangulations, relatively rare.
  - b. Neoplasms, relatively common.

#### GROUP B

##### *Chronic Obstructive Lesions.*

1. Small bowel, relatively rare.
2. Large bowel, relatively common.

#### GROUP C

##### *Non-obstructive Lesions.*

1. Small bowel.
  - a. Ulcerations, perforations, etc.
  - b. Neoplasms in the early stages.
2. Large bowel.
  - a. Ulcerations, perforations, etc.
  - b. Neoplasms in the early stages.

#### THE EARLY STAGES OF ACUTE INTESTINAL OBSTRUCTION

The early stages of acute intestinal obstruction from mechanical causes, such as bands or twists, in either the small or large bowel, call for immediate laparotomy. There can be no question that surgical relief in the first few hours of obstruction is as certain in its results as is the early operation for acute appendicitis. The problem here is one of early diagnosis. Neither gangrene nor marked distention will be present in the early stages. Removal of the cause and closure of the abdomen is usually all that is required.

Tumors as a cause of intestinal obstruction present a different problem, and will be dealt with later.

#### MODERATELY EARLY ACUTE INTESTINAL OBSTRUCTION

Between the very early and the very late stages the problem becomes more involved. After relieving the obstruction, I have either drained the distended intestine by an enterostomy or emptied the distended coils by sliding them over a rubber tube. It is possible in a few minutes to put all the ileum and jejunum on the tube relieving the intestine of several pints of fluid and much gas. In some cases the distended bowel could not have been returned into the ab-

dominal cavity had this emptying process not been done. It is probable that when there is



Fig. 4. Volvulus of the cecum. The cecostomy after reduction provides drainage and at the same time fixes the cecum to the lateral abdominal wall, thus preventing recurrence.



Fig. 5. Volvulus of sigmoid. A tube passed from the anus to the descending colon above provides immediate drainage. The sigmoid is stitched to the parietal wall to prevent recurrence of the volvulus.

much distention a preliminary enterostomy would have been the better procedure, and I am inclined now to do enterostomy in earlier stages than formerly. The patients in whom emptying of the bowel was done, however, recovered, with



one exception, and this was an old man of seventy-three. The advantages of such a procedure are so obvious and the results so positive that any objections raised are outweighed by the results obtained. If evisceration is unnecessary and the intestines do not protrude from the wound, an enterostomy, in all but the very earliest stages, should be done in addition to relieving the obstruction. Post-operative distention, added to an already distended abdomen unrelieved by enterostomy, may be more than the patient can overcome. Should actual gangrene of the bowel be found a two-stage resection gives the best prognosis, and if distention is marked, this, I believe, is the only justifiable procedure. Immediate drainage of the distended upper bowel is obtained by purse-stringing a tube into its lumen.

In volvulus of the large bowel, the indications, after relieving the rotation, are drainage and fixation. On the right side this can be best accomplished by cecostomy, which serves the double purpose. (Fig. 4.) In volvulus of the sigmoid I have accomplished drainage by passing a long tube from the rectum well into the descending colon guided from within. Recurrence is prevented by stitching the sigmoid to the parietal peritoneum. (Fig. 5.)

#### THE LATE STAGES OF ACUTE INTESTINAL OBSTRUCTION

In the late stages of acute intestinal obstruction of either the small or large bowel, drainage proximal to the lesion is a *sine qua non*. This is no longer a debatable question. Exploration should positively be avoided until distention has been relieved. Therefore, differentiation between small and large bowel obstruction is very important in deciding where to drain. The history of the case, the physical examination, the results of enemas, and, if available, *x*-ray plates, in most cases, will settle the question. In small bowel obstruction, except in strangulated internal hernia or other rare forms of obstruction, as gall-stone ileus, there is a history of some inflammatory process with or without an abdominal operation. The onset is sudden. Vomiting is persistent from the first. In late cases there is distention, most marked in the center of the abdomen. Peristalsis may not be seen, but often a mass of tense coils may be felt. An enema, at first, may bring some feces and gas from the colon, but, if repeated, gives usually no result. The blood urea is very high. *X*-ray shows gas in the small bowel, and when the obstruction is low the coils run transversely, the so-called stepladder arrangement.

In acute obstruction of the large bowel the symptoms are usually superimposed upon those of a chronic obstruction. Therefore in the large majority of cases there will be an antecedent history of chronic constipation becoming more aggravated, or a history of constipation alternating with diarrhea. With malignant growths in the right half of the colon there is often a history of diarrhea with blood and mucus in the stools. Diverticulitis of the sigmoid or colon gives a different syndrome. The history of constipation is of longer duration, but, as a rule, no blood is passed. Adhesion of the inflammatory mass to the bladder will account for the frequency of urinary symptoms in diverticulitis of the sigmoid. In volvulus the symptoms are, of course, more abrupt. Vomiting is usually later than in small bowel obstruction. The distention is more lateral, and examination may show peristaltic waves. Tumor mass may or may not be felt. An *x*-ray, if immediately available, is a valuable aid in localization. An air shadow in the small or large bowel (Plates I and II) means an obstruction distal and not proximal to it. A barium



Plate 1. *X*-ray plate taken of the abdomen in a case of acute intestinal obstruction showing large air shadow in right upper quadrant. This was found to be in a very large duodenum due to obstruction high in the jejunum. There was congenital absence of attachment of the right colon and mesentery to the posterior abdominal wall. The right colon and small intestine were suspended in the abdomen by the superior mesenteric vessels, the jejunum and transverse colon forming part of the pedicle. The right colon and small intestine had made two revolutions, twisting the pedicle.



Plate 2. X-ray taken of the abdomen in a case of chronic intestinal obstruction becoming acute. Air shadow showing in the right colon. The obstruction was due to carcinoma in the transverse colon near the hepatic flexure.



Plate 3. Subacute obstruction in the transverse colon near the hepatic flexure. The barium enema passed the obstruction, filling the dilated right colon.

enema may be quickly given and with fluoroscope or plate the obstruction may be more accurately located. (Plate III.) This we have found, on several occasions, of great advantage, especially in deciding on the operative procedure.

Late small-bowel obstruction should be relieved by an enterostomy, done under local anesthesia, through a muscle-splitting incision placed high in the left side. (Jejunostomy—Fig. 1.) Obstruc-

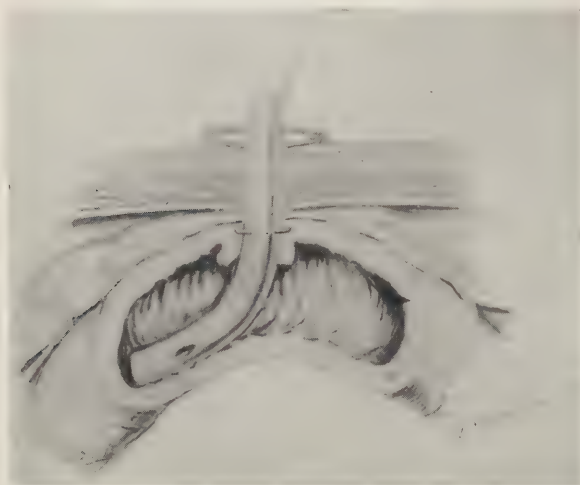


Fig. 1. Enterostomy. Fecal current not entirely diverted to the surface. Method used for jejunostomy, ileostomy and cecostomy. The method of Wetzels gastrostomy applied to the bowel is also satisfactory, though a case has not been seen by the author where a single purse string suture had been used, which failed to close very soon after removal of the tube.

tion in the right colon is best relieved by an enterostomy placed low in the left side (ileostomy). The stoma will be far enough removed from



Fig. 2. First-stage temporary colostomy. Fecal current entirely diverted to the surface by spur. A simple and efficient method for making an artificial anus, applicable to the sigmoid, transverse colon, or ileum. By mobilization the method can be applied to almost any part of the colon.

the ileocecal segment so as not to interfere with subsequent resection, should this be necessary.

Obstruction in the left colon above the sigmoid



may be relieved by a preliminary cecostomy. It must be borne in mind that these indications apply to relatively late, acute, intestinal obstruction. Where the obstruction is in the sigmoid and calls for resection, especially in old patients, the so-called Mikulicz operation is very satisfactory and where the obstruction is too low to be brought to the surface, a colostomy (Fig. 2) high in the sigmoid is preferable to a cecostomy. A cecostomy is a very inefficient method for clearing the colon of hard fecal masses impacted above an obstruction.

In the resection of neoplasms of the small or large intestine, the element of obstruction must be considered. In the small intestine with slight obstructive symptoms, resection along with a temporary enterostomy should be the usual procedure. Should a marked degree of obstruction be present, two methods are available, namely, resection in two stages with immediate drainage of the proximal bowel or a preliminary enterostomy followed by resection. So often the decision is not made before the abdomen is opened. The following is a case in point illustrating two-stage resection in the small bowel. A boy, aged 8, entered the hospital with acute intestinal obstruction. A right paramedian incision revealed an intussusception of ileum that was irreducible. (Fig. 3.) As a severe degree

immediately drained by purse-stringing a rubber tube into its lumen. Recovery was uneventful. The remaining stages of the operation were completed in the usual manner.

#### NEOPLASMS OF THE LARGE BOWEL

Cancer is the surgical problem of the colon. According to Burgess' statistics nine cases in ten of colonic obstruction are due to cancer. Drainage preliminary to resection in obstructive growths of the colon is a fundamental principle which needs repeated emphasis. In non-obstructive growths or those with only a slight degree of obstruction, the question of drainage preliminary to or at the time of operation requires consideration. Decisions in favor of a one-stage or two-stage operation must be made. This is the most debatable point in the surgery of the colon. My personal opinion is that, whether obstruction is absent or has been relieved by enterostomy or cecostomy, a two-stage operation gives the best prognosis, and this applies not only to the left colon but to the right colon, as well. The operation can be as radical by one method as by the other.

A thorough knowledge of the blood supply and lymph drainage of the colon is essential for resection in malignant disease. The work of Poirier and Cuneo in France and Jameson and Dobson in England has shown with accuracy the lymph drainage of the colon, and this knowledge can be applied in a scientific way to the surgery of malignant disease of this region. (Fig. 6.) A point of great importance is that some of the lymph vessels miss the paracolic



Fig. 3. Extraperitoneal resection in unreducible intussusception, illustrating the application of the two-stage resection to the small bowel (ileum).

of distention was present, the case being of two day's duration, I brought the mass to the surface, stitching the afferent and efferent parts of the bowel together to form a spur, and passed a tube through the mesentery under the mass to prevent retraction. The proximal bowel was

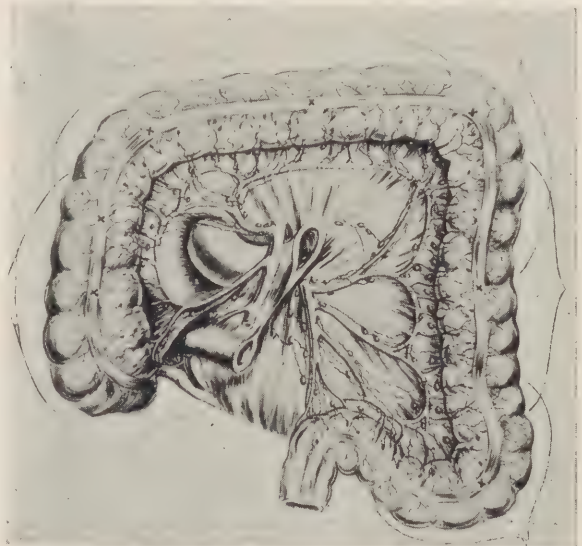


Fig. 6. The colon: its lymphatics and blood supply. Modified from Jameson and Dobson, Poirier and Charpy.

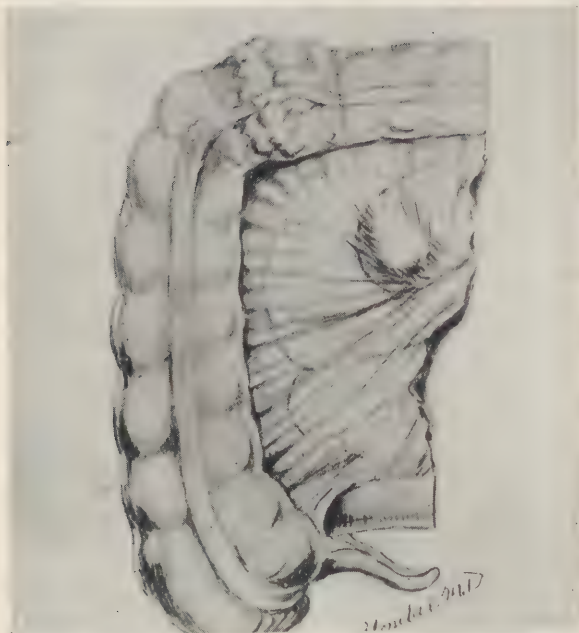


Fig. 7. Specimen of right colon removed for cancer at hepatic flexure by two stage method. Note the enlarged intermediate gland (secondary group), the paracolic (primary group) being missed.

gland draining directly into the intermediate group beyond. (Figs. 6 and 7.)

When the mobilization of the area to be removed is completed and the parietal peritoneum freed from the posterior abdominal wall toward the midline the lymphatic area is mapped out in a somewhat triangular shape, the apex of the triangle corresponding to the main lymph nodes. The ureter is defined and unless involved in the gland mass is carefully preserved from injury. Needless to say, a preliminary survey of the abdomen to determine operability is presupposed. The leaf of peritoneum with the intermediate lymph glands at its apex and the paracolic lymph glands at its base is turned outward, the marginal arteries being conserved. (Fig. 8.) The raw surface is re-peritonealized by stitching the two edges of the posterior parietal peritoneum together, care being taken not to injure the remaining blood supply to the bowel. The two arms of the mobilized loop are now sutured together to form the spur, and the loop with the freed peritoneum and gland is brought outside. The mass may be removed at once, a Paul's or rubber tube being tied in the proximal end of the bowel. The distal end may be tied or clamped. It is well to have a generous amount of bowel protruding so that the wound may be protected with gauze placed about the bowel. This further insures against the bowel retracting. The second stage of closing the fistula is begun when the bowel has become well anchored,



Fig. 8. Showing removal of mesentery with primary and secondary lymph nodes in multiple stage resection of colon. The mobilized loop with the parietal peritoneum and lymph area is brought to the surface. Note the marginal arteries to the loop are conserved.

usually in two weeks, by trimming off any protruding bowel to the skin surface and placing a clamp on the spur. Should there be any spur left, after the clamp has cut through, the clamp should be reapplied. The longer the spur, the larger will be the opening at the point of union, and the less trouble from narrowing. (Fig. 9.)

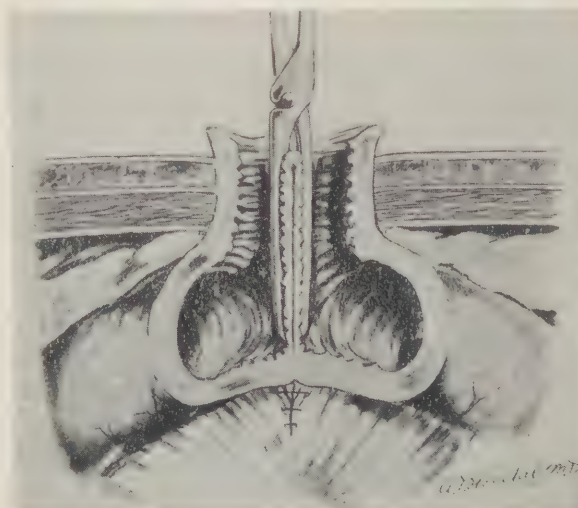


Fig. 9. Destruction of spur by clamp before closing temporary colostomy. A long spur gives the best result. A second application of the clamp may be required to complete the destruction of the spur.

The fistula may be closed after the spur has been cut through, but I have found that a delay of a few weeks gives greater assurance of success, the patient in the meantime going about in the ordinary way.

The advantages of the two-stage operation over immediate resection are the following:



1. Conservation of time in the first stage.
2. Dividing the load for the patient.
3. Lessened operative shock.
4. No soiling of peritoneal cavity.
5. Elimination of the danger of sloughing of the united ends of the bowel with failure of union and resulting peritonitis.
6. Preliminary enterostomy as a rule only necessary in obstructed cases.
7. Early drainage of proximal bowel.
8. A lowered operative mortality.

The last point outweighs all objections that obtain to the two-stage method, such as the annoyance of a second operation and the extra loss of time.

## A REVIEW OF THE MODERN STUDY OF MENTAL DISEASE\*

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In preparing this review I soon appreciated that the subject was almost inexhaustible; but what I have to say will be more or less of a comment on the various books and articles which I have read. Most of these books and articles contain so much that is well written that I am induced to quote very largely from many of these papers in order to present the subject adequately.

It is quite evident from the investigation of this matter that we overlook the fundamental study of mental disease, namely the patient himself, for usually a history of the family and of the individual reveals within a reasonable time the order in which this individual, in the future, may conduct his life. In one of Bassoe's books on mental and nervous diseases he comments as follows:

"The classification and the study of mental diseases is not infrequently brought into confusion by the lack of contact between psychiatrists and general medicine and lay people," and Dr. Bassoe further comments, "Not to be facetious, but in a serious and most kindly spirit and with profuse apologies to the able and admirable investigators whom we shall quote, we wish to call attention to a danger of which workers in modern psychiatry seem to be unaware. We refer to a tendency which, curiously enough, is more conspicuous in American psychiatric literature than in any other, and which is traceable to certain people and leaders in whom, however, it was more natural and less obnoxious than their followers. This tendency is toward the needless use of a cumbersome tenuity and equally cumbersome and involved style. While these pictures may be scarcely noted by those belonging to the same schools, they form a serious obstacle to the attainment of the very object

desired by psychiatrists in every school, namely; that general practitioners and the public at large shall have their eyes opened to the importance of the understanding of morbid mental factors, not only in disease, but in all lines of human activity. These learned authors may say that they express themselves differently when not addressing fellow specialists, but they should know too much of the laws governing the formation of mental habits to be unaware of their own dangers."

One author, Dr. George W. Henry, Senior Physician of Bloomington Hospital, White Plains, has written a delightful book on the "Essentials of Psychiatry;" and in the foreword written by Dr. Thomas W. Salmon, he remarks that it is a significant trend in modern medicine that is leading the interest of physicians to the patient as a subject for study no less important than the disease itself. In former times we studied disease rather than the patient, and now we are presuming to get back to the fundamentals, namely, the patient. This brings us to a broader concept of human life in health and in disease, that physicians are again turning their attention to such questions as constitution, disposition, habitus, and temperament, and perhaps, too, to the new science of endocrinology, as that may be in some instances and in fact is one of the factors which must be considered in the investigation of mental disease.

No treatment of mental disease is really scientific or really practical that does not seek to restore all relationships that have been disturbed, but neither the exact nature of these relationships nor the exact nature of the disturbances that have taken place can be understood without knowledge of the kind of person it is in whom events are taking place. It is evident that any concept of disease broad enough to give ade-

\*Read before the Minnesota Academy of Medicine, February 9, 1927.

quate weight to the individual himself, the psychological, as well as the physiological and biochemical, reactions that occur as the causes and effects of disease, must receive consideration. Not only differences in constitutional, mental make-up but permanent or transitory changes in mental processes must be taken into account if medicine is to approach the study of the sick person in a spirit anything resembling that in which the study of disease has been carried on. Dr. Henry, when a medical student, heard much in medical lectures on psychiatry, and he found that it was very mysterious and infinitely complex because it followed the old line of study and presented many things that were not carefully expressed and were outlined in such a manner as to convince him that a more simple and condensed method was necessary to present the subject of psychiatry than had heretofore been employed. And he speaks quite feelingly about the difficulties which the medical student and the medical man frequently encounter in getting down to a concrete basis.

James Harvey Robinson, in "The Ordeal of Civilization," recommends the method of the modern physician who in dealing with physical and mental dislocations, always asks, "How did he get that way?" He is not content to take what he sees without wondering how it came about. "Our social, political, and economic diseases must be dealt with in the same way."

"The Need of Psychological Training of Physicians," an article by Sir John Herbert Parsons on "Medicine and Psychology" (Bristol M. Chir. Jour. March and June, 1922) says that he believes the medical profession has neglected the study of the behavior of human beings. "Medical students are compelled to spend years in acquiring a knowledge of the structure and functions of the human body, but are left with little or no instruction in the activities of the mind, which the body subserves. The stress of modern life, culminating in the war, has greatly increased the amount of mental instability, more particularly in those less severe forms which come under the observation of general practitioners and others who are least well equipped to deal with them."

"Mental Symptoms in Physical Disease" is the title of an address by Sir Maurice Craig (London Lancet, November 4, 1922) in which he says that "while the close relationship of mind and body has long been recognized, in practice this interrelationship has been largely lost sight of, and the tendency has been to investi-

gate them apart, to the detriment of our knowledge of each. It must be conceded that all physical disease has a concomitant mental change, just as all mind disorder is associated with variations in the bodily functions. Consequently it is the neuropath who will first show nervous symptoms." And this, perhaps, accounts for the many disturbances of sensations, the hyperesthesias and hyperchondriases, which belong wholly to the nervous side of disease. Craig also states that in most persons prolonged pain is associated with definite mental changes, such as irritability and restlessness.

Dr. H. A. Cotton (Am Jour. Psychiat., October, 1922) presents a paper on "Focal Infection and Insanity." He believes that the precipitation of many psychoses in the psychopathic case is due to a focal infection, and he quotes at great length in the removal of teeth, tonsils, and other infections.

The endocrines perhaps play a much more important part than we already assume in spite of the fact that we know comparatively little about their activities other than the thyroid and pituitaries. It is doubtless true that many of our borderline cases or potential mental cases are due to defects in the endocrine system, either functional or organic, and these must be taken into consideration. The majority of them are directly or indirectly associated with mental disorders, as well as many of the physical disturbances which arise in the predisposed individual.

Pellagra, in its later stages, is not infrequently accompanied by mental symptoms,—a change in personality, an unfriendly attitude toward old friends; and then other symptoms of organic nervous disorder develop, headache, diplopia, and disturbances in the stomach, and often delusions of poisoning and other suspicions, with changes in the gait and in the reflexes.

Sir James Purves-Stewart (Practitioner, October, 1924) speaks of alcoholism and its effect upon the nervous system, in which he defines delirium tremens as "a violent and dramatic form of delirium occurring in chronic alcoholists in whom, as a result of some sudden acute accident, illness, or incarceration, the regular daily dose of alcohol is too rapidly reduced or entirely cut off."

G. W. Crile (Archives of Surgery, September, 1924) speaks of exhaustion from auto-intoxication. He begins by stating that auto-intoxication is caused by (1) retention of waste products; (2) arrested katabolism, especially of the proteins; (3) from the formation of cer-



tain complex substances as a result of faulty action on the part of some organ; (4) from toxic substances presumably produced by intestinal bacteria which were absorbed when normal elimination is completely arrested, as in acute intestinal obstruction.

H. M. Pollock (Amer. Jour. Psychiat., January, 1924), statistician to the New York State Hospital Commission, said that, "while there undoubtedly has been some general increase in insanity, this, like the apparent increase in cancer, is mitigated by various factors. For instance, during the 40-year period here considered, the average length of life in the United States has increased from 41 to 56 years. This means that hundreds of thousands of children and young people who previously would have died from infectious diseases now live long enough to develop insanity." And, of course, the increase of population adds to this factor. One important principle is that the rate of mental disease is greater among inferior stocks than among superior stocks. If this trend continues the people of the future will become more or less susceptible to mental disease. Pollock further says, "The rates of dementia precox and manic-depressive psychosis are both increasing, and, if nothing is discovered to curb these diseases, while new discoveries continue to be made in the realm of bodily disease, then mental disease will supersede physical disease as the paramount social problem in the not distant future."

Dr. A. M. Barrett (Amer. Jour. Psychiat., October, 1924) discusses the "Constitution and Disposition in Relation to Mental Disease," and speaks of these two great groups referred to above, the cyclothymias (which in plain English are manic-depressive cases) and the schizothymias (which means dementia precox); that the relationship between the two is extremely close and not infrequently one is merged with the other. And in order to understand them more fully we must study all the underlying constitutional aspects. He believes that there are evidences that some fundamental, specific quality must be the cause of these disorders.

"Atypical Psychoses and Heterologous Hereditary Disposition," a monograph in Danish by J. C. Smith, states that he believes the most important foundation for such studies are the Mendelian laws, Kraepelin's distinction between dementia precox and the manic-depressive psychosis, and the heredity studies of Rüdin. The general opinion is that each of these two psychoses

mentioned is inherited as such, and that the presence of one in a family practically excludes the other; although he says dementia precox is thought to be inherited as a recessive trait and manic-depressive insanity as a dominant trait.

"Relation of Secondary Sexual Characteristics in Females to the Psychoses" (taken from Dr. Charles E. Gibbs' article in the American Journal of Psychiatry, July, 1924) emphasizes the relationship or the correlation between this topic and dementia precox; these patients with psychotic reactions have certain benign aspects usually resembling manic excitement and sometimes is a forerunner of a typical onset of a psychosis. This seems to be the opinion of other writers, too, as to the grouping of these two, cause and effect, again suggesting the probabilities of endocrine disturbance as an important factor in sexual behavior manifestations and disturbances. Hence it is quite necessary, in investigating these people, to get at their peculiar sexual life from its inception, and particularly when associated with instinctive desires for normal heterosexual life when it is frequently fulfilled in dreams, hallucinations, and love fantasies.

Then, too, there is much discussion about the relationship between goiter and insanity. H. L. Foss and J. A. Jackson (Amer. Jour. Med. Sc., May, 1924) made quite extensive observations in Pennsylvania in the region known as the goiter belt. They found that goiter was not especially common in the insane, and that seemingly there were no true cases of insanity among 800 patients studied, but only a mental disturbance in the form of mild excitement, really slight and transient mania. So these men believe there is no definite relationship between goiter and insanity, yet we see them associated and usually uselessly operated on.

Studies in mental hygiene and in child guidance clinics often bring out many direct and indirect relationships that are discovered in welfare investigations. The analysis of 700 cases has shown that many pupils are unable to keep abreast of the times because of their feeble-mindedness. Fully one-half of the children whose adjustment in the schoolroom is faulty owe their failure of adaptivity to physical and environmental factors, the correction of which produces a prompt change for the better. A large percentage of juvenile delinquents and especially sex offenders are of psychopathic personality or defective mentality.

In "A Short-Cut to Mental Age Determination" (Archives of Neurology and Psychiatry,

June, 1924) D. M. Levy thinks that "much could be learned about the patient's mental condition by observing his actions during a routine physical examination, such as the way he dresses, sits down, or lies down on the table, and so forth. After numerous trials the following five tests were selected. (1) 'Close your eyes and touch the tip of your nose with the tip of your finger,' (2) 'Spread your arms way out to the sides and then bring the tips of these two fingers together way in front of you with your eyes closed,' (3) 'Close your eyes and put your left heel on your right knee,' (4) The examiner points to a visual chart on the wall and hands the patient a card, then says, 'Take the card and go to the wall. With your back to the wall, put the card over your left eye and read aloud the top letter on that chart,' (5) The patient is asked if he knows what the palms of his hands are; and, if he does not, he is told. Then, 'put your hands way out in front of you, palms downward, then spread your fingers far apart and turn them around until they are palms upward; then put out your tongue.' " Levy thinks this test supersedes the Stanford-Binet for mental age in the case of showing very irregular attention, when however, co-operation during briefer tests could be secured, especially in dementia-precox and post-encephalitic children.

The best material for becoming familiar with the mental processes by which human beings think, feel and act, is that provided by what Stanley Hall has called Nature's cruel experiment of insanity. If for no other reason than this, the broadly trained physicians should be familiar with the main formulations of present-day psychopathology and with the main clinical varieties of abnormal mental states. It is astounding that few grave forms of disease are more prevalent than the psychoses. More beds in public hospitals are occupied by patients suffering from psychoses in this country than by all other sick persons combined. In New York state one person in ten who reaches adult life enters a mental hospital before he dies. "Every year sees more than 60,000 new patients admitted to institutions for the treatment of types of mental diseases that are so severe in their manifestations that relatives, friends, or public officials cannot overlook them. General practitioners of medicine have the responsibility of dealing with nearly all these patients for weeks and months before they are brought to the attention of psychiatrists. And these early weeks and months often constitute the really critical period of the

whole illness. In them are largely determined the issues of recoverability or chronicity, the patients' attitude toward the disease with which they are afflicted and toward the procedure undertaken for their treatment, the attitude of relatives and authorities and the social effects of disordered conduct."

One sees in this quotation alone the necessity for the general practitioner, the internist, and the surgeon to ferret out a history that is usually much more important than the average history taken by the physician and surgeon, for it really lies with him to analyze the case, to study it with great care, and to appreciate the fact that people suffer from neuropsychiatric disorders; and hence we use the words *psychoneuroses* and *psychoneurotic attitudes* to indicate conditions that aggravate and prolong general illnesses and many accidental injuries. The lessons learned about the psychoneuroses might readily relieve the patient from his ultimate residence in a hospital for the insane. It has been well said that most of the sick people are more or less mental cases. At least their attitudes toward themselves and the world should be recognized early. It means a long and wearisome experience sometimes before the physician recognizes or has had sufficient experience with these people so that he may become familiar with the patients, as well as with their symptoms."

Of course there is much to be said upon the question of personality development, and it has to do with many of the ways of heredity and environment, perhaps both, as it is very difficult to separate one from the other. And it is by a study of the lower forms of animal life that we may gain our first intimation of the changes which take place in the development, in the arrangement, and in the future of the cells and particularly in the chromosomes, and that we learn so much of the human element. The complexity of structure and function is an exceedingly interesting one, and we must familiarize ourselves more closely with the development of the nervous system with its nervous mechanism and with its ultimate distinction before we can appreciate the importance of the neuropsychiatric life. At birth we find a well-developed segmented nervous system somewhat analogous to the primitive segmented nervous system found in higher invertebrates. It is composed of a double series of ganglia which have communications with the spinal cord of the cerebrospinal nervous system, with the viscera, and with all involuntary structures, through intermediate groups of gan-



glia. According to its function it is divided into three parts; the upper part, or cranial portion, is composed largely of the vagus nerve with its branches, and it is known as the *cranial autonomic division* and is chiefly concerned with the nutrition of the individual. A middle portion, composed of nervous structure associated with the series of ganglia in the thoracic-lumbar region, is called a *sympathetic division*, and is chiefly concerned with self-preservation of the individual. The lower portion is composed of nervous structure associated with the series of ganglia in the sacral region and is called the *sacral autonomic division*. It is concerned chiefly with the reproductive functions, that is, with the preservation of the race. This whole primitive nervous system composed of the three divisions just described is commonly referred to as the *vegetative nervous system*. This primitive nervous system, too, has intimately associated with it many, if not at all, of the ductless glands. It is probably associated with such physiological changes as accompany various functional psychoses.

This might be expanded at greater length, but this will be found better described in either Dr. Henry's book or other books which have to do with the nervous system in general and its development.

In general, it may be said that a person is born with three primary instincts or personality forces: the instinct of self-preservation; the instinct for the preservation of the species; and the herd and social instinct. The instinct for the preservation of the species does not become established until after puberty when sex functions become physiologically mature, although immature manifestations begin in infancy. In some individuals certain of these manifestations continue through life in the form of masturbation, homosexuality, and other sex perversions. This is introduced to show the necessity of realizing and recognizing how much the nervous system has to do with sexual expressions. It is so great that certain social relations and normal laws have been established governing its manifestations.

We can readily see the way these various incidents in life of the nervous system and its early formations have to do with different phases of life which come later and which manifest themselves in many of the psychoneurotic conditions. It also shows how in early life many of the conditions which are recognized as things which are imitative in children become a desire to meet

with the approval of older people. It also shows at the time of puberty when the new changes in the nervous system have begun that the responsibility of parents, relatives, and friends becomes a high point of endeavor in either repression or expression. It is the time when complex emotions such as admiration, awe, reverence jealousy, shame, and bashfulness, are manifested, with the responsibilities in life and the realization that there are frequent conflicts between the sexual and social instincts, and it shows, too, the necessity of providing for a restraining influence over both boys and girls as to their tendency to lapse into loose methods, to exhibit lack of restraint, and that probably is responsible for the present-day conditions among young people who desire to live their own individual lives, much to the concern of their elders, and not infrequently much to the indifference of people at large. Only the superior personality can be governed in daily conduct by high ideals and purpose regardless of the praise or blame of the social environment. As we grow older, the readjustment of our lives and of our conduct must be maintained at a higher level, and it is during these periods of development and adjustment that we meet with the peculiarities that are really evidences of either an immature or a loosely developed nervous system.

The classification of various forms of insanity has developed through the centuries and particularly in the 19th century; we have been much troubled as to the value of these various classifications, most of our text-books contain unnecessary and expansive ideas of what classification may mean, and it is wise, therefore, to restrict our definition of classifications on as simple a basis as possible. And, although we may like to emphasize our knowledge of insanity by dividing it into innumerable types, four groups are mentioned which practically cover the entire field. We sometimes give little or no indication of the quality or quantity of an environmental hereditary influence and there is seldom any indication of inherent capacity to resist it, so that individual patients may have a condition which covers individual psychoses. By the group psychoses can be described most of our mental cases. Dr. Henry has divided these group psychoses into practically three varieties: first, the important environmental influences and their modifiability; second, the constitutional capacities and predisposition of the patient; third, the nature and extent of the deviation resulting from attempts at environmental and self-adjust-

ment. But in this group it is only after detailed study of the patient's personality and environment that we can accomplish this as a classification which covers a very wide field. The personality disease or disorders are divided into four large groups: One group which is composed of those psychoses in which the disorders are largely psychological in nature includes the affective, paranoic and paranoid, dementia precox and psychoneurotic disorders. A second group, called the *toxic psychoses*, is composed of the disorders due essentially to abnormal physiological conditions and includes what is commonly referred to as *toxic, infectious, and exhaustive psychoses*. A third group called the *organic psychoses* is composed of those psychoses in which there are actual anatomical changes in the nervous system and particularly in the brain. This group includes those psychoses due to injuries, tumors, certain infections or conditions, such as cerebral arteriosclerosis and senility. In these conditions there is actual change or destruction of structures of the nervous system. The fourth group called *constitutional inferiority* is composed of those personality deviations which are due to constitutional, physical, intellectual, instinctive, or emotional defects. Please note carefully that the term "defects" is used here. This group also includes psychoses in which constitutional defect forms the most conspicuous characteristic.

These quotations and abstracts so far show the necessary approach to the study of mental disease and particularly to the borderline cases, in fact to many of the individuals who are more or less inferior. And I am tempted to quote from an article in the February *Century* on "The Modern Woman," which perhaps has but little bearing on the subject, but shows the trend of modern times. In this article Will Durant says, "philosophers grow dizzy as she passes by." His discourse on the subject is introduced simply to show, how near, perhaps, we are to the borderline in modernism and fundamentalism in medicine. Durant says that until 1900 or so a woman had hardly any rights which a man was legally bound to respect. He might beat her and be well within the law if he left her moderately alive; he might, in merrie England, commit adultery every evening after supper and still be within the law; if he did not also desert her she had no redress except to imitate him. If she earned money it belonged to him; if she brought him property in marriage it was his to spend. That she would ever have the privilege

of working in a factory, or the sacred honor of marching to the polls, never occurred to anyone.

"Then, suddenly, these once pretty slaves began to talk about freedom and other fetishes, about equality and other impossibilities; they smashed windows, ruined letter-boxes, made interminable parades and ferocious perorations. To vary another 'Comedy of Errors':

'In bed we slept not for their urging it;

At board we fed not for their urging it;

In company they often glanced at it.'

"They made up their minds and they had their way. Now we cannot beat them any more, they will not cook for us any more, they will not even stay at home with us of an evening. Instead of worrying about our sins they are busy with their own; they have acquired souls and votes at the very time when men seem to have lost the one and forgotten the other; they smoke and swear and drink and think, while the proud males who once monopolized those arts are at home superintending the nursery.

"So, the home being empty, no longer a place where things were done or life was lived, men and women abandoned it, and began to sleep in boxes, honeycombs called tenements or apartment-houses, dormitories for people whose lives, day and evening, were spent outside, in the roar and babble of the city. An institution which had lasted ten thousand years was destroyed in a generation. Our scientific sociologists and social psychologists had taught us that institutions, customs, and morals could not be altered except by slow and imperceptible gradations; but here was one of the greatest changes in the history of civilization, and it had come almost over-night, between the boyhood and the maturity of one man.

"And then those new machines, called contraceptives, completed the circle, and co-operated silently in emancipating women. Freed from the care of the offspring, freed therefore from the last task which might have made the home a tolerable and meaningful environment for her, she went into the office and the factory and the world. One by one, the new woman took over the habits, good or bad, of the traditional and old-fashioned male; she imitated his cigarettes, his profanity, his agnosticism, his hair-dress, and his pants."

"Affective psychoses are psychoses in which the essential characteristics are disorders of mood or state of feelings. They are commonly known as *manic-depressive psychoses* and constitute



from 10 to 15 per cent of all psychoses. Attacks may occur anywhere after ten years, although hospital reports show these psychoses occur between the ages of fifteen and forty. About half of these patients have inherited tendencies toward mood disorders. More important, however, are the cultivation of unhealthy habits of adjustment and faulty reaction to personal experience and relations previous to maturity. The members of the immediate family, and especially parents, are more or less responsible for the cultivation of these unhealthy habits. In general it may be said that there is a tendency toward the accumulation of emotions resulting from experiences to which the individual has been unable to make a normal adjustment. These unhealthy and unadjusted emotional reactions may accumulate over a period of months or years. The final reaction is excessive and prolonged more or less according to the intensity of these feelings and the length of time during which they have been suppressed. Such individuals are those who are overwhelmed, for example, by common causes, such as death of relatives, failure of business, or unusual mental shocks. They may be constantly too elated or exuberant over pleasant and successful experiences, and they tend to become habitual. They have, of course, a mental phase which is characterized by excitement way beyond the period of normality. These patients are governed by prolonged feelings of elation, exhilaration and unusual good health. They are bound to be over-active, over-talkative, have increased distractibility, playfulness, mischievousness, loss of poise, and impaired capacity for conservative thought and action. They more or less resemble the first stages of alcoholic intoxication. The condition is apt to go on to a more definite manic condition. Their flight of ideas is unrestrained. They become loud, vulgar, and profane. Their sleep is irregular; illusions and vague hallucinations are fairly common. Delusions, when present, are transient and not systematized. They go further than this and become what is commonly known as suffering from a definite mania which goes to any extent. When this phase subsides there may be an interval of practical relief and practical restoration under normal conditions, but this is followed by a depressive phase, one of mild depression, marked depression, and stuporous depression. One must remember these people during the period of depression are always actively suicidal or at least looked upon as potential suicides. Too much stress, then, can-

not be put on the word "depression" because it covers a wide field and a condition in which the patient is apt to destroy himself, and yet they are often unrecognized until the suicidal calamity startles friends, relatives, and others. It is in these cases, when they grow older or when they develop in middle life, that the patient develops what we call *involutional melancholia*, and it is due largely to physical changes, particularly changes in the arterial system. It is commonly found in the menopause and in the decline of sex functions, hence it occurs between the ages of fifty and sixty. Fortunately, these people are capable of much improvement and about 40 to 50 per cent make a satisfactory recovery.

Common forms of mental disorder in this first group are the *paranoic* and *paranoid psychoses* defined as psychoses characterized by the formation of more or less fixed and systematic delusions, and we call these cases either *paranoic* or *paranoid* because of these fixed persistent ideas of suspicion, persecution, and hallucinatory states. These are the individuals that are trying, not only to their friends, but to the community. They comprise a large number of those who are constantly in trouble, frequently in litigation. They are looked upon sometimes as eccentric individuals. They have the delusion of self-importance and grandeur. Many of these people are litigants in court because of their fixed persecutive and grandiose ideas and very often go through a trial unrecognized from that point of view. They are often pests of a community and they get sympathy, consequently they are very uncertain in their conduct, and they may do most anything because of their diseased egos. However, fortunately they begin to quiet down after a period of years, and they grow less troublesome although always they are looked upon with suspicion; they are the people who assume importance and not infrequently declare themselves to be other individuals, well-known and well-recognized. That is, they think they are well-recognized, but as a matter of fact they have only delusions of grandeur. How many of these cases become potential cases will be determined by a careful history analysis.

In a review of the "Practical Medicine Series" devoted to nervous and mental diseases, Dr. Bassoe has abstracted a large number of papers, among them is one by A. T. Mathers made at the Ontario Neuropsychiatric meeting held at Toronto, February, 1922, in which he says:

"Students who now hear nothing of the part that personality plays in disease must be taught

to scan their patients' lives for that abnormal sensitiveness and that emotional instability that play no slight part in painting the disease picture. Their questions must not be, 'What is happening to this man's heart, lungs or kidneys,' but 'What is this individual trying to do? Has he actual solid pathology that will account for all his complaints? Has he no solid pathology at all, or has he a moiety of structural and functional change nestling in the midst of a large cloud of abnormal mental reaction?' Of the physician's own personality we need only say that there is no single factor that speaks louder for success or failure in medicine than the possession or lack of 'that which inspires faith in a sick man, who as he lies a crumpled wreck, longs for a spark of happiness, the ray of hope to lighten his darkness.' He who would be a psychiatrist must also be a physician, and in very truth he who would be a physician must ever and always be something of a psychiatrist. And so, day by day, physicians practicing their art with steadfastness, with inexhaustible hope and inflexible resolution, may know that while much is known, much remains to be known. They may well pray that they live 'not as fools and fine gentlemen, not beaten by the muddle, but like good fellows trying by some dim candle light to set their workshop ready against tomorrow's daylight.'

"It seems to me that mental medicine gives a scope that demands our most serious efforts. We are not, I trust, among those who fold their arms and settle all problems by some simple and all-embracing formula, nor are we to be numbered among those who, terrified by the growing complexity of their problems, abandon themselves to the narcotic dreams of mysticism. To us is given the task of unraveling the tangled skein of human behavior, benign and otherwise, and as we search for motives and mechanisms, we are inspired by that which seems to indicate a lofty and glorious destiny. We must not be dismayed when under the surface of our much vaunted intellectual idealism, under all of our most intense self-satisfactions, we find nestling the primitive."

Such is the work that is being carried out in many of our psychiatric clinics, and these patients who appear and disappear or reappear in the departments of medicine are generally given symptomatic treatment when they should be transferred to the psychiatric clinic.

Early treatment of psychopathological conditions is encouraged and the cloud which has

long overshadowed mental conditions is removed.

// No marked social distinction is made between early diseases of the mind and diseases of the body; they are all part of the material to be dealt with in the general hospital.

The organization of most hospitals with their special departments for diagnosis and treatment of organic complications is at hand. Both the medical profession and the general public soon observe that incipient mental conditions are best dealt with by specialists in psychological medicine. Recruits for medical work and nurses in the course of their general training, all should be taught the necessity of some preliminary training for the study of mental factors in health.

The second group, called the *toxic psychoses*, is self-explanatory, as is the third group called *organic psychoses*; and the fourth group, which is perhaps the largest group of all, takes in the personality deviations and could be discussed from various angles. The reduction of classification of mental diseases from perhaps 60 or 75 different groups to these four groups can safely be made to conform to the cases that we ordinarily see. Consequently, the diagnosis of mental disease can be made from a history of the individual, not necessarily his disease except in one or two groups, but from his life and his up-bringing, his heredity and his environment.

To go into the treatment of mental disease would be a dubious task, and one can emphasize only a few points, namely, separation of the patient from his former environment and from his home influences, and, if possible, keep him isolated or at least partially so for a long time. This is the essential factor in treatment. This means real rest; not half rest, but confinement in bed in a hospital suitable for such cases and under the direction and management which the relatives and friends of the patient should thoroughly understand; that is, it must be absolute, and they must be told and taught to co-operate. The attention to any physical disorders should always be kept in mind.<sup>11</sup> The attention to diet is quite as important as rest, for the average case comes into the hospital overloaded with his own secretions because he has led an abnormal life. He perhaps never has been taught how to care for himself; and to that end one should institute a method of training for the future, and that training should be carried on by men who are qualified to recognize the mental side of the individual, by the nurse who is qualified to care for his food intake; and his mind should be train-



ed to adjust itself to a new method of living. This training is quite as important as anything. How often do you see patients who suffer from mental disorders who are harrassed by their families, fed with stuff that should be put in the garbage can, and they are discouraged at every move. The family seem to have an aptitude for inflicting themselves on the patient at the wrong time with domestic complaints which

tend to return the individual to his old train of ideas. This sounds like Plato's utopian scheme, but as a matter of the utmost interest the medication of the individual may be safely left with the attending physician. One is often surprised to find, in many instances where it is necessary to give the individual something to help him sleep, how easy it is to eliminate most of drug medications.

## INTERCURRENT TRAUMATISM IN EPILEPSY FOLLOWED BY REMISSION

By LEO KANNER, M.D.

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It is a well known fact that traumatism occupies an important place in the etiology of epilepsy. Although it is quite uncertain whether injuries to the head are to be looked upon as the actual causes or as precipitating factors only, the various statistics show that in from 3 to 8 per cent of the epileptics there is a history of such blows preceding the onset of the disease. The nature of epilepsy also makes it intelligible that during its course, particularly during the grand mal seizures, the patients are likely to sustain injuries which occasionally become severer than the common tongue bites and minor lacerations of the skin. Fractures and dislocations in epileptics are not very frequent, it is true, but every institution housing a sufficient number of these patients knows of a few who show evidence of bones broken in the course of the disease. Spratling<sup>1</sup> found 29 fractures in 825 cases of epilepsy. (0.35 per cent)

In looking over the literature we do not find any mention of the further course of the disease in cases in which severe injuries were sustained. In the majority of the instances of intercurrent major traumatism which the author had the opportunity to observe, the blow usually seemed to exercise no influence whatsoever upon the subsequent fate of the patient. In one case, however the results arising from the injury were so unusual and had so beneficial an effect upon the patient's physical and psychical condition, checking the seizures completely and restoring his mental faculties to fullest extent, that it is worth while to give a description of the case.

Robert L., white, native born of German descent, a South Dakota farmer, of common school education, was committed to the Yankton State Hospital on July 10, 1922. He was then thirty-six years old. He had been suffering from epilepsy since the age of

sixteen, the seizures becoming more frequent from year to year until, at the time of his admission, he had several convulsions on one day. At the same time he underwent a progressive mental deterioration. He was intractable, quarrelsome, irritable, and violent, and was feared by his relatives and neighbors because of his repeated homicidal threats. When he arrived at the hospital he was completely disoriented, could not recall where he came from, was very restless and excitable, and had to be restrained. He was given luminal sodium, which he took regularly since December 26, 1923. As a result of this treatment, the epileptic seizures decreased in frequency and in degree of severity, and there was also some change for the better in his mental condition. Yet the convulsions were still frequent enough, and he still displayed the shallow altruism so characteristic of the epileptic disposition. Whenever it was necessary to restrain another patient he obtruded into the scuffle and would attack the attendant. On one occasion a fellow patient, also an epileptic, was disturbed and attacked an attendant, and while the attendant was engaged in subduing him, Robert attacked him and beat him about the face. On another occasion when the same attendant was speaking to a patient, his back turned to Robert, he attempted to strike the attendant by throwing a heavy tea cup and would have done so had it not been for another employee. His epileptic seizures now occurred in series and were of the status variety. He would have several of these attacks in a short time and be very disturbed, confused, violent and dangerous for a period of one or two weeks, requiring restraint and seclusion. He had a great number of hypochondriacal delusions, always demanding and wanting the physician's full attention, at the same time criticizing every order and refusing to take the prescribed medicine. He kept scratching his legs, wished to have them bandaged, yet was very resistive, cursed, and used the obscenest language while his legs were looked after.

On April 26, 1925, when most of the patients were in the chapel and but one attendant left on the ward with a few inmates too disturbed to be taken to church service, Robert attacked the attendant, saying: "You are alone and single-handed, I am going to clean up on you." During the struggle which

ensued in the attendant's attempt to defend himself and subdue the patient, Robert received a complete fracture of the body of the mandible somewhat to the right of the middle line with separation of fragments. The fracture has healed within about three weeks and he now has a normal occlusion.

This injury had a very remarkable effect on the course of the epilepsy. The seizures disappeared completely and never came back, although the patient has received no luminal nor any other medication for more than twenty months. His mental condition has changed suddenly on the very day he received the injury. He has been very reasonable since, his conversation is normal, he is a clean, quiet, obedient and co-operative patient who has been working steadily on the hospital farm for almost two years. He is said to be one of the best, faithfullest, and most dependable workers on the farm. There is no trace of unusual irritability or excitability, he gets along splendidly with the employees and his fellow patients, is free from hypochondria-

cal ideas, writes very sensible letters to his relatives, is neat in his appearance, and has not caused the least disturbance since April 26, 1925, that is the day when the injury occurred.

Roasendi<sup>2</sup> reported the case of a young woman who during an epileptic status sliced off a toe with a painful corn. The hemorrhage very nearly proved fatal, but the epilepsy seemed to be arrested thereafter.

It is, of course, impossible to draw a definite conclusion from these two cases, the fact, however, that in both cases the severe traumatism was followed by complete remissions lasting not less than two years each, deserves to be recorded.

1. Spratling, Wm. A.: *Epilepsy and Its Treatment*, 1904, Saunders & Co., p. 248.

2. Roasendi, G: *Autophagia and Automutilations in Mental Disorders*. *Polliclinico*, Rome, 1923, 30, May 7, p. 594.

## REPORT OF A CASE OF SCURVY IN A RURAL COMMUNITY

BY DURWARD R. JONES, M.D.

State Epidemiologist

WAUBAY, SOUTH DAKOTA

The case reported is one of scurvy occurring in South Dakota.

The patient is a female, twenty-two months old and the ninth child in a family of ten. The feeding was on the breast to six months when mixed feeding was started. The mixed feeding was limited in variety and contained no fresh fruit. For several months previous to the onset of this condition the diet had been reduced, principally, to bread and gravy.

The family was very poor, and since a total failure of garden vegetables had occurred in this community no fresh foods were readily obtained.

The child walked at one year and was apparently normal in every way. At about eighteen months, or in July, 1926, the child became very irritable, restless, crying almost constantly, and particularly at night. Walking and playing ceased and when approached the child showed fear and if touched or handled cried as though in distress. Throughout the four months previous to examination the symptoms became aggravated and on two or three occasions the child had been unconscious for short periods. Upon

examination October 23, 1926, the child weighed fifteen pounds and four ounces. The skin was quite pale, rough and dry, hemorrhagic pouches were noted at the base of the teeth and the gums were swollen and discolored. The legs were swollen, particularly about the ankles and the skin over these parts was smooth and shiny. Several black and blue spots were noted over the tibia. When approached the child screamed as though anticipating great pain, and the distress was evidently increased by handling. There was a notable loss of tissue turgor.

A provisional diagnosis of infantile scurvy was made, and the child was given an anti-scorbutic diet. Improvement was noted in seventy-two hours, and complete recovery, even to the point of walking, resulted in six weeks. A gain in weight and improvement in appearance and general condition accompanied. A recent report indicates that the child is progressing normally at the time of this report, March 15, 1927.

This case seems of unusual interest because of its occurrence in a rural community where scurvy would least be expected.



## PROCEEDINGS OF THE MINNEAPOLIS CLINICAL CLUB

Meeting of February 17, 1927

The regular monthly meeting of the Minneapolis Clinical Club was held at the Elks' Club on Thursday evening, February 17, 1927. Dinner was served at 6 P. M., and the meeting was called to order by the President, Dr. R. C. Webb, at 7 P. M. There were twenty members and two visitors present.

The Annual Election of officers resulted in the following men being elected for the ensuing year:

President.....Dr. J. M. Hayes  
Vice-President.....Dr. Walter E. Camp  
Secy.-Treas.....Dr. H. M. N. Wynne

Dr. J. M. Hayes showed slides taken from the works of various surgeons illustrating the progress of gastric surgery, and reported five cases as follows:

The first slide is one taken from the work of Strauss illustrating the Ramstedt or Strauss' modification of the Ramstedt operation for pyloric stenosis in the infant. Up to 1912 a gastro-enterostomy was the operation of choice for this condition. This extensive operative procedure carried with it a large mortality rate.

In 1910 Fredet, a Frenchman, himself not a surgeon, conceived the idea of dividing the pyloric musculature down to the mucosa for the relief of this condition. In 1912 Ramstedt first put this idea into practice, and it is now known as the Ramstedt operation. This operation has proven a great source of relief for those who operate on these unfortunate babies. The operation has been modified by various surgeons, but the original Ramstedt operation, if carefully and skillfully done, leaves little to be desired.

With the recent pre-operative and post-operative care of these cases, with a prompt and accurate diagnosis, with skillful choice, and proper administration of anesthesia, a skillful surgeon should have a very low operative mortality in this condition.

The case I am presenting is a fairly typical case.

CASE 1. Baby B., firstborn, boy, was apparently quite normal up to nearly three weeks, then vomiting began. In a day or two from the onset vomiting became projectile. He was treated at that time by a pediatrician, and the vomiting subsided to some extent. At five weeks the vomiting again became severe, the child vomiting practically everything he ate. Emaciation and dehydration took place so rapidly that the pediatrician considered operation very urgent on about the thirty-seventh day.

Through the jugular vein the baby was transfused with 100 c.c. of citrated blood, and 300 c.c. of a 3 per cent glucose solution was given by the subcutaneous route. The baby was then taken to the operating room and given a sugar pacifier. Under local anesthesia, a high right rectus incision, about one inch long, was made. The hypertrophied pylorus was pulled up into the wound by means of a hoop retractor. The tissues of the pylorus and ad-

jacent parts of stomach and duodenum were cut and spread apart according to the method of Ramstedt. The mucosa was allowed to permeate well through the wound, well to each side of the pylorus. Slight bleeding was encountered on the gastric side. This was controlled by hot applications. No sutures or further surgery was done. The stomach was dropped back, and now a slight amount of ether was given while the peritoneum was being closed. The baby returned from the operating room with no evidence of shock. One hour after operation the baby was given water, and then breast milk every hour for several hours. The baby has been a perfectly normal baby since. It is now five months old and, as you see, appears as any normal baby of that age.

I have a few more pictures showing the developments of surgery in gastric cancer. In 1881 Billroth first resected the stomach for the eradication of cancer. The Billroth No. I was then the method used. The surgical mortality was 45 per cent to 50 per cent. Later, with the aid of Hartmann and Mikulicz, Billroth devised the Billroth No. II. Later, Polya instituted the method known by his name. Here he closed the cut-off duodenum and anastomosed the jejunum to the cut-off end of the stomach posteriorly. Later, Balfour brought the jejunum up in front of the transverse colon for the anastomosis. This is known as the Balfour-Polya method, or anterior Polya.

Gerato, Cuneo, Polya, von Novrotil, Jameson and Dobson, and McCarthy worked out the distribution of the lymphatic and blood supply to the stomach. This gives us a fairly accurate idea of the direction of metastasis of gastric cancer.

From this information, Most and Boorman worked out the so-called anatomical resection of the stomach. This includes most of the lesser curvature, or the gland-bearing area of the stomach.

Until recently, the surgical mortality was so great that few surgeons have given much encouragement to resections for cancer of the stomach. As late as 1910, Kronlein and Mikulicz gave as high as 25 per cent to 37 per cent surgical mortality. With the improved methods of pre-operative and post-operative treatment and refinement of surgical technic, the surgical mortality should be kept well under 10 per cent. Some of our best gastric surgeons have given very encouraging results in resection for gastric carcinoma. They have reported well over 30 per cent of three-

year cures, and over 25 per cent of five-year cures.

Considering the fact that the average life of these patients is about one year from the time of visiting the surgeon, if not operated on, these reports should inspire us to attempt to benefit these unfortunate people.

I have three cases to show. The first is not carcinoma, but is so often mistaken for this condition that I thought it worth while to show it here.

CASE 2. Mrs. J., aged 28, apparently normal up to three years ago. Then she had a perforating gastric ulcer. The ulcer was sewed over and a gastro-enterostomy made. The patient recovered nicely and was married soon after this. She now has a healthy child about two years old. About a year ago she was taken quite suddenly with severe pains immediately after eating. She felt fairly well when she refrained from eating, but anything taken into the mouth gave severe pain. She had recently lost six or eight pounds in weight. She was taken to the hospital and gastric x-rays made. The report came back: "Extensive filling defect in stomach, probably malignant, or due to extragastric pressure."

Looking at the extensive filling defect on the x-ray plate, then at the patient, made one doubt the possibility of malignancy. The patient appeared young, not markedly emaciated or dehydrated. On palpating the abdomen one was surprised that no tumor could be felt even though the abdominal wall was very thin. These facts suggested the possibility of lues. The Wassermann report returned positive, and the patient was immediately put on specific treatment. The symptoms have all disappeared although the anatomy of the stomach remains very much the same.

The next two cases are almost identical so far as the pathology was concerned.

CASE 3. Mrs. S., aged 65. Her history was negative up to two years before operation. She was then treated for gastric ulcer. Following treatment she was better for about one year, then distress after eating and considerable belching of gas took place. The symptoms were not marked until about one month before operation. About three weeks before operation she began to vomit almost everything she ate. This continued up to the time of operation. The patient was given fluids and other pre-operative treatment and a Billroth No. II resection was done in September, 1923. The slide shows the small amount of stomach which she has now, yet she says that she eats as well and feels as well generally as she has for several years. It is

now about three years and seven months since she was operated on.

CASE 4. Mr. N., aged 46. The patient had always been a healthy, robust man. The family history was negative, and his personal history negative up to one year before operation. He was then treated for dyspepsia, gastritis, and indigestion. He was foreman on a road-building crew, and was the strongest man of the crew. He weighed 200 pounds before taken sick, but went down to 160 pounds. He had been vomiting practically everything he ate for four or five weeks before operation. He had become so weak and emaciated that he fainted and fell over when stood up behind the fluoroscope.

He was sent to the hospital and prepared as Case 3. A Billroth No. II resection of the stomach was done May, 1924, and the remaining portion of the stomach is practically the same as in Case 3. This man went to work one month after operation and has not lost a day on account of sickness since. He is back to his original weight and, as you see, appears normal in every way. He says he feels as well as he ever did and can eat about every kind of food without distress. It is nearly three years now since his operation.

Another case of cancer of the stomach is quite different from the other two.

CASE 5. Mrs. R., aged 36. Family history is negative. Her personal history was negative until very recently. There was no distress or other symptoms except loss of weight up to a very short time ago. Then epigastric distress began, and she consulted a doctor. The x-ray, as you have seen, shows a marked filling defect in the body of the stomach, but the cardiac end is clear. She was taken to the hospital about three weeks ago, given glucose solution intravenously, and a posterior Polya resection of the stomach was done. The first day following the operation she had considerable distress. This was relieved with the duodenal tube, and she has had an uneventful convalescence. She has just left the hospital and could not get here to-night.

This woman had no metastasis so far as we could make out. She has but a very small portion of her stomach left, but this seems to be functioning well, and she should get at least a few years of comfort.

By unanimous vote of the members present, it was decided to omit discussion of these case reports as well as the remainder of the scientific program of the evening, in order that the members might attend a meeting on medical legislation at the State Capitol.

The meeting adjourned.

H. M. N. WYNNE, M.D.

Secretary



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MAY 15, 1927

## SOUTH DAKOTA STATE MEDICAL ASSOCIATION MEETING

A very delightful and a very well-attended meeting took place in Huron, South Dakota, on May 3, 4 and 5. On the day of the 3d the Council and the House of Delegates had their session and it was concluded on the 5th, and transacted business necessary for the proceeding of the society. And naturally, too, there followed the election of officers: Dr. H. M. Hoff was nominated and elected to succeed the presiding officer, Dr. T. F. Riggs, of Pierre. The first vice-president was Dr. N. K. Hopkins, of Arlington; second vice-president, Dr. L. M. Grosvenor, of Huron; and third vice-president, Dr. P. D. Peabody, of Webster. Dr. J. F. D. Cook was re-elected secretary and treasurer. Dr. W. R. Ball, of Mitchell, was chosen as the delegate to the 1928 convention of the American Medical Association, and Dr. T. F. Riggs, of Pierre, was chosen as alternate.

It was decided evidently by the State Association that its men must see South Dakota and all others who intend to be present at the 1928 meeting, which will be held some time next May, and they have taken us to the Black Hills, the meeting is to be held at Hot Springs, which is a lower border of the Black Foothills, and doubtless many will attend the meeting, not only

outside of South Dakota, but many inside of South Dakota have never seen the famous Black Hills.

The number of registrations was two hundred, an unusually well-attended convention, and, fortunately, Huron decked itself out with good weather, sunshine, and the proper temperature. The meetings were held at the Marvin-Hughitt Hotel in the large room devoted to public meetings, a very desirable meeting place and very convenient for those who were living in the hotel and those who had their meals there. It is, by the way, a very good hotel, comparatively new, well organized, and very well run.

The program was an interesting one, and it was presented in the issue of April 15th of THE JOURNAL-LANCET. There is only one criticism to offer. That is, the South Dakota men are so modest that they had only two South Dakota men on their program. This is a bad precedent to establish, but it worked out all right, although it is the belief of the editor that more of the local men should participate in programs for the intellectual exercise it gives them and also for the logical presentation of themselves to their State Association. Most of these papers will be presented in due time in THE JOURNAL-LANCET.

The outside, or visiting men, presented clinics and papers and among them was Dr. F. C. Rodda, of Minneapolis, who gave a snappy, pediatric clinic and later in the day talked upon the "Prophylactic and Therapeutic Treatment of Communicable Diseases."

Dr. J. C. Ohlmacher, Director of the State Health Laboratory, Vermillion, South Dakota, gave a very interesting talk on the "Anatomical and Pathological Evidence of Arrest or Cure in Certain Cases of Diabetes Mellitus," and his plea was for its early recognition and appropriate treatment.

Dr. John C. Coulter, Head of the Department of Physiotherapy at Northwestern University, Chicago, presented his physiotherapy ideas. He was extremely conservative and confined himself to the scientific side of physiotherapy.

The Association had arranged for a public meeting to be held in the Presbyterian Church so that the citizens of the town might attend and were expected to hear a paper on what every man and woman should know about cancer and other health problems. The speaker who opened the evening meeting was Dr. J. M. Dodson, Dean of Rush Medical College, Chicago, a very interesting talker and a man who is constantly trying to elevate the medical man and the lay-man in

the simple problems of public health. He was followed by Dr. William A. O'Brien, of the Pathological Department of the University of Minnesota. He very ably took the place of Dr. Bloodgood, of Baltimore, who was unable to be present. It was very interesting to have one of our own men called on at short notice to give such an instructive paper to the public. He had, as one would naturally expect, lantern slides of cancer, and he also had the happy faculty of injecting a little humor into his remarks. The following day he occupied a place on the program, again in the place of Dr. Bloodgood, and gave the same lecture, except from a little different angle, to the medical men on the subject of cancer and allied conditions and insisted upon the early recognition of things that might become cancer, and the treatment of them, and showed by his slides the difference between malignant and benign tumors. Evidently the work of cancer education is going on at a very rapid rate, for it means everything to the people and, although it may not have diminished the actual number of cancer cases, it certainly has recognized the early stages or that they may develop from other conditions in the body, and has established the fact beyond question that early diagnosis and early removal of cancer is the principal feature of the treatment of the disease. Dr. O'Brien stressed the point, too, that the word in itself had a terrifying meaning to a great many people and doctors, when it might be modified more often and the patient relieved from a very distressing condition.

Dr. O'Brien also gave the Association a very interesting lecture upon one of the popular cults. It was not only instructive, but was very amusing, and showed how some of the people can be fooled all of the time and all of the people some of the time, but one cannot fool all the people all the time. Lincoln's phrase can still be added to the conditions that exist at the present time. Dr. O'Brien described conditions in a very graphic way, and he was rather inclined to think that a great many of these new fads in healing will soon disappear, but he insisted that something else will take their places through the attempt of some people to continue to fool the people.

Dr. Henry L. Ulrich, Associate Professor of Medicine, University of Minnesota, gave a very interesting medical clinic and after his clinic was concluded he gave a short talk on hypertension, a very instructive talk. Though it is a speculative topic, it was worth while for everyone's consideration.

Dr. Mayo Berkman, Associate Professor of

Medicine, Mayo Clinic, Rochester, Minnesota, presented a paper on "Dyspepsia." It was quite evident he put into it all sorts of things responsible for dyspepsia,—ulcer, cancer, etc.

Dr. A. L. Severeide, Peabody Clinic, Webster, South Dakota, talked on the "Diagnosis of Stomach and Intestinal Diseases," a very instructive and well-thought out talk which we will be only too glad to publish as early as possible.

Dr. C. W. Hopkins, Chief Surgeon of the Chicago and Northwestern Railway Company, began and ended the session on Thursday. His topic for the morning was "Head Injuries, with Methods of Diagnosis and Treatment," and with lantern slides he showed how very serious head injuries are cared for and many of them restored, but a serious head injury he illustrated as one that is permanent. It seems he had had unfortunate experiences or seen a number of hopeless conditions. His final and closing talk was on the subject of the treatment of crushing wounds of the extremities on which he stressed the need of saving all possible tissue without much sacrifice. He went into the method of treatment, by the newer methods of hydrogen peroxide acidulated, and also the permanganate of potash treatment. His talk in this direction bordered very closely on the compensation situation and doubtless would have led to a good deal of discussion had there been an opportunity.

On the whole this meeting was a success from every angle. The men were all seemingly contented and happy. No one complained of hard times or anything else, and Dr. T. F. Riggs in his presidential address stressed the need of our medical men getting into closer harmony, telling of the legislative accomplishment of South Dakota, and how by compromise they had improved the status materially.

## STIMULATING MEDICAL ORGANIZATION

One of the principal reasons why Minnesota and Minneapolis want the American Medical Association for 1928 is that many of our county and state societies in the vicinity are losing their morale, and it is to be hoped that the meeting of the Association here will stimulate, not only the societies, but the individual members to get together in a closer organization. Then, perhaps, it creates a little different atmosphere if men who are far away can hear men who are internationally known and get a chance to have an intimate conversation with these celebrities, because here is many a man, many a doctor, par-



ticularly, who is modest and unassuming, and yet when you draw him out and chat with him you find he has a wonderful mind, and association with him is stimulating and perhaps will teach one to consider many things from different angles.

Fortunately, many states in this vicinity have picked up a great deal in their organization methods. We can safely say that Minnesota has done wonderfully well under the circumstances; that is, in spite of the hard times and the difficulty of living as comfortably as one would like the medical profession have stuck together. The state organization has never been in so good condition, and apparently very few have objected to the increase of the state dues to fifteen dollars. Doubtless there are some men who look at that fifteen dollars as a sort of parting gift: they dislike to lend it out for better medical work, but in the end they find that it pays. Then, too, in getting together on many subjects we find it is much easier than we had surmised. As an illustration of this, take the Twin Cities as an example. The men of the Twin Cities, through their affiliations with the many societies that exist in both cities have come to a better understanding. There is less jealousy and strife, and they work together in every way much better than they did before, and the old feeling on the outside that the Twin Cities are constantly picking at each other has gradually changed to the expression that the Twin Cities are getting together from a business and from an ethical standpoint. Yet the same condition may not prevail all over the state. The inference is that things are not going very well for the doctor or his patients. But if one mingles with the state medical men, one will find that although there is difficulty in business affairs there is never a question as to whether the doctor will attend a patient or not,—he goes, just the same. And even though some patients may take advantage of the hard financial times, the doctor does his duty. In that way he is keeping up his ethical side, and it is to be hoped that the public will appreciate the attitude of the medical man and remember him in their conferences with one another.

The doctor is not infrequently the butt of severe comment and complaint. The patient disclaims any benefit while under the doctor's care. He makes remarks that are more or less ridiculous, perhaps because he thinks it is smart or he is brought up to "knocking," but that does not pay. The medical associations can do much in educating the people toward their profession. Since the stringent times have come on it is

sometimes difficult for a doctor to make a living, and he may depart from his custom of referring his patients to others, first, because he needs the patient and, second, because he thinks he can take as good care of him as any other man, all of which may be true. But that is not altogether the former ethical point of view of the doctor. He felt that he could do better for his patient by calling in a consultant, getting his ideas, talking them over frankly and freely and preferably in the presence of the family, and in that way establishing a more cordial relationship between patient and physician.

As has been said before, we are going to have a little trouble for a while in adjusting ourselves to the new law in Minnesota, the "Basic Science Law." Therefore it behooves us to be more careful in our investigation and examination of our patients, and to be sure we have made an examination. A great many people go into a doctor's office, sit down and talk with him and tell him their complaints, and he perhaps feels of the pulse and looks at the tongue and because he has known the individual for a long time he feels qualified to give an opinion. It he? Would it not be very much better if he made a careful, thorough examination and avoided the difficulties that one man got into? The patient complained of a pain in his upper abdomen, and he was told by his friend and confrere that in all probability he had a gall-bladder disease, and the gall-bladder was removed; but the pain persisted and the patient sought again the advice of his friend, who decided that the pain was probably due to a diseased appendix, so that was removed,—and the pain continued. Finally, after some time, this man said to his surgeon, "Would you mind if I went in to see this cult man?" and his friend said, "No; I will turn around the other way, and you slip in." Then the patient was told to take off his clothing, and was turned with his back toward the operator; he was told that there was nothing to do for him, that he had Potts' disease and that he had better go and see his physician again. Then the operator said, "By the way, how many doctors have looked at your back since you have been sick?" and the patient answered, "Not one." Comment is hardly necessary. The original physician had not made a complete painstaking examination. It is not well, perhaps, under the circumstances, to worry ourselves too much, for we believe we are going to get together and learn something from one another and continue to practice medicine better than we have before.

We are tempted, here, to introduce a little

quotation from a newspaper which many of our readers may have seen, but which is well worth repeating. "Don't worry too much to-day," advises the *Marietta Herald*. "Things may be worse to-morrow, and then you can worry twice as hard." And speaking of that, we take the liberty of quoting again:

"Don't worry if your job is small,  
And your rewards are few.  
Remember that the mighty oak,  
Was once a nut like you."

## NEWS ITEMS

Dr. W. H. Goeckerman, of the Mayo Clinic, has returned from a trip abroad.

Dr. F. P. Silvernale, of Elmore, has sold his practice and will take up a specialty.

Dr. E. C. Hartley, of St. Paul, was married last week to Miss Zita Haley, of Valentine, Neb.

Dr. E. M. McLaughlin, of Winona, has returned after a big game hunt of six months in Africa.

Dr. F. W. S. Raiter, of Cloquet, left for Europe last week. He will study in Berlin and Vienna.

Dr. Peter E. Hermanson, of Ivanhoe, and Miss Ethel C. Pederson, of Tyler, were married last month.

Dr. Douglas, of Oamaru, and Dr. Home, of New Plymouth, New Zealand, are visiting the Mayo Clinic.

Dr. E. L. Whitney, of Minneapolis, was married last month to Miss Evelyn Rundell, also of Minneapolis.

Dr. Arthur T. Larson, a 1926 graduate of the Medical School of the U. of M., will locate at Mobridge, S. D.

Dr. J. L. Larson, of Bagley, announces that he will erect a new hospital on Lake Lomond, to cost about \$20,000.

Dr. George C. Doyle has joined the Duluth Clinic. His practice will be limited to skin and genito-urinary diseases.

Work has been started on the 36-bed addition to the Union Hospital of New Ulm. The addition will cost over \$75,000.

Dr. Charles J. Hutchinson, of Minneapolis, was married last month to Miss Marion C. Chapell, also of Minneapolis.

Dr. Harold H. Vandersluis, a 1926 graduate of the Medical School of the U. of M., has located for practice in Fergus Falls.

The Miles City (Montana) Clinic has moved into its new clinic building, occupying the entire second floor with 46 rooms.

The State Soldiers' Home at Columbia Falls, Mont., is to be enlarged and plans for the addition are being drawn by an architect.

Dr. Thomas Mulligan, of Grand Forks, N. D., presented a paper before the Cass County (N. D.) Medical Society at Fargo last month on "Cancer."

At the April meeting of the Park Region District Medical Society, held at Fergus Falls last month, the program was furnished by the staff of the State Hospital.

The Union Clinic and Davison Hospitals of Willmar have consolidated under the name of the General Hospital, which is planned to have a capacity of thirty beds.

Dr. J. L. McElroy, former Superintendent of Ancker Hospital, St. Paul, who became Superintendent of the University Hospital of Iowa, in 1925, has resigned his position.

Dr. T. F. Boston, who recently resigned from the staff of the St. Peter (Minn.) Hospital has been appointed assistant superintendent of the Illinois State Hospital at Kankakee, Ill.

Dr. J. T. Delougherty, of Prior Lake, was married last month to Miss Helen Roe, of Duluth. Dr. Delougherty is a graduate of the Medical School of the U. of M., class of '25.

The South Dakota State Nurses' Examining Board will meet June 1 and 2, at Pierre, South Dakota. Headquarters, St. Charles Hotel. Mrs. Elizabeth Dryborough, R.N., is the Secretary-Treasurer.

The Visiting Nurses of Minnesota will celebrate the twenty-fifth anniversary of the founding of the organization, on Thursday of this week. An officer of the National organization will deliver the address.

Dr. Alfred B. Hart, of Owatonna, died last week at the age of 59. Dr. Hart was a graduate of the Medical School of the University of Minnesota, class of '03, and had practiced in Owatonna for fourteen years.

A quarterly meeting of the Devils Lake (N. D.) District Medical Society was held last week at Devils Lake. Papers were presented by



Dr. J. D. Graham, of Starkweather, and Dr. John H. Moore, of Grand Forks.

Dr. Huie Pock, of Butte, Mont., the first Chinese physician in Montana, died last month at the age of 78. Dr. Pock knew considerable of the science of medicine, but still practiced along the Chinese lines of healing.

The summer meeting of the Sioux Valley Medical Association will be held in Sioux Falls on Wednesday, June 29, instead of on June 8, as stated in our last issue. An excellent program is promised by the program committee.

Dr. George W. Suddard, of Hayti, S. D., died last month, as the result of an auto accident, at the age of 62. Dr. Suddard was a graduate of Bennett Medical College, Chicago, class of '08, and had practiced at Hayti since graduating.

Dr. George M. Constans, a graduate of the Medical School of the U. of M., class of '17, who later specialized in eye, ear, nose, and throat work at the Mayo Clinic, has joined the Quain and Ramstad Clinic, of Bismarck, N. D.

Dr. O. J. Engstrand, of Bemidji, has been appointed chief surgeon of the staff of the Warren Hospital at Warren. Dr. Engstrand is a graduate of the Medical School of the U. of M., class of '22. He will be associated with Dr. H. M. Blegen, of Warren.

The fifth semi-annual Clinic Day of the McKennan Hospital of Sioux Falls was given last month. Over twenty names of prominent South Dakota physicians were on the program, and the presentation of cases and exhibits of lantern-slides added interest to the talks.

The University of Wisconsin will graduate its first class in medicine next month, when 19 men and women will receive their degrees in medicine. It will also issue at the same time its first certificate to a graduate nurse. Eleven women will have completed the nurses' training course.

The Honorable Stanley Argyle, Chief Secretary and Minister of Health of the State of Victoria, Australia, and Mrs. Argyle were in Rochester last month for a short visit. They are traveling in this country with a group of distinguished Australians in the interest of hospitals and medical education.

At the April meeting of the Grand Forks (N. D.) Medical Society, Dr. M. S. Brannon, Chancellor of the University of Montana, made the principal address which was on the "Control

of Rocky Mountain Spotted Fever." In his introductory remarks he told of the founding of the Medical School of the University of North Dakota.

Dr. Egbert J. Borgeson, who graduated from the Medical School of the U. of M., in the class of '18, and was a member of the teaching staff of the University for two years while doing graduate work in ophthalmology and otolaryngology, has located in Minneapolis and will restrict his work to diseases of the eye, ear, nose, and throat.

Dr. Emil D. W. Hauser, who completed his fellowship at the Mayo Clinic in orthopedic surgery this year, is leaving the Clinic. After spending a short time at his home in Minneapolis he will go to Chicago where he will be associated with Professor H. B. Thomas of the University of Illinois, and St. Luke's and the Research Hospitals.

At the forty-fifth annual session of the South Dakota State Medical Association held at Huron, May 3, 4, and 5, the following officers for the current year were elected: President, Dr. S. M. Hohf, Yankton; first vice-president, Dr. N. K. Hopkins, Arlington; second vice-president, Dr. L. N. Grosvenor, Huron; third vice-president, Dr. P. D. Peabody, Webster; delegate to the A. M. A., Dr. W. R. Ball, Mitchell; alternate delegate, Dr. T. F. Riggs, Pierre. The place of the meeting for 1928 is Hot Springs. Editorial comment is made of the meeting on another page.

The Duluth Clinic of Duluth entered its new building on May 1. The building is said to offer unusual interest architecturally and from the standpoint of providing facilities for doctors grouped together. It is a handsome structure, three stories high, and cost nearly \$200,000. The Clinic is composed of eighteen physicians. As the Minnesota State Medical Society meets in Duluth this year, those interested will find it a good opportunity to visit the building and observe the details of its arrangement, laboratories, and Roentgen equipment. William Chalmers Agnew, of Duluth, drew the plans.

## MISCELLANY

### IN MEMORIAM

#### DR. DANIEL GEIB

Dr. Daniel Geib was born in Elmira, Ontario, Canada, February 8, 1855 and died at Detroit, Michigan, February 17, 1927.

He attended the Rockwood Academy, Rockwood, Ontario, and was graduated in medicine from the University of Michigan in 1879.

For a time he practiced in Arlington and Cambria, Wisconsin. In 1887 he located at Greton, South Dakota, and continued a general practice, was active in public affairs, an active member of his District and State Medical Associations, was Councilor of the State Medical Association for the Aberdeen District Medical Society, and served as president of the Aberdeen Medical Society.

In 1915 he moved to Detroit, Michigan, where he was in active practice until 1926 when he retired. He was a member of the Michigan State Medical Association, the Wayne County Medical Society, and the East Side Physicians Association of Detroit, Michigan.

He was married in 1880 to Louisa Davis, of Vandecar, Ontario, who with four children (Doctors L. O. and O. D. Geib and Gladys Geib of Detroit, Michigan, and Mrs. Jay Reeves, of Marshfield, Oregon) survive him.

J. F. D. COOK, M.D.

#### **West Central (Minnesota) Medical Society**

The West Central Minnesota Medical Society met at Starbuck, April 30. The members of the Society and their ladies were the guests of Drs. Christenson, Gibbon, Opheim, and Linde at a six o'clock dinner. Dr. W. P. Larson, University of Minnesota Medical School, delivered a free public lecture on the subject: "The Control of Infectious Diseases by Vaccination."

The next meeting of the Society will be held at Ortonville on June 19. This meeting will be an outing for the members of the Society and their ladies, and Drs. Bolsta, Karn, Shelver, and O'Donnell of that place will see that this meeting will be a success.

H. LINDE, M.D.  
Secretary

#### **The Scott-Carver County (Minn.) Medical Society**

The Scott-Carver County Society met last month in the Community Hospital of New Prague.

Papers were presented by Dr. D. Marx White, of Minneapolis, on "Diseases of the Heart," and by Dr. O. M. Yoerg, of Minneapolis, on "Differential Diagnosis of Stomach Conditions in the Acute Abdomen."

Dr. W. F. Maertz, President of the Society, presided.

The June meeting of the Society will be held in Montgomery.

#### **Duluth Meeting of Former Medical Officers**

The annual meeting and stag party of the Northwestern Medical Officers Association will be held at Duluth, Thursday evening, June 30. According to arrangements made, our meeting will not interfere with any doings of the State Medical Association which will then be in session. We want all former medical officers who will attend the State

Medical meeting to be with us that night. In order to get some idea how many the committee should prepare for we want all such officers to send a card to Dr. W. G. Strobel, Duluth Clinic, Duluth, Minnesota, and tell him that you will be there. If you let us know that you are coming, we will try not to disappoint you.

W. F. MAERTZ, M.D., President  
New Prague, Minn.

#### **Registered Nurse Wants Position in a Doctor's Office**

Position wanted in Minneapolis. The best of references furnished. Address 351, care of this office.

#### **Minneapolis Location Offered**

A desirable location for a physician with a dentist is offered over a new drug-store on a busy street car line in Minneapolis. Address 347, care of this office.

#### **Good Opening for Physician**

This in a South Dakota town in the heart of the corn belt. Nothing to buy. A money maker from the start. Good roads, wealthy farming community. Address 343, care of this office.

#### **Office Position as Secretary Wanted**

By a thoroughly capable woman with large experience. Good stenographer and book-keeper. Large experience and best of references. Available June 1. Address 349, care of this office.

#### **Practice for Sale in South Dakota**

In Eastern South Dakota, town of 300. Office in the home, which is modern and located on Main St., in business district. Community largely Lutheran and Catholic. Would like to hear from a live man at once. Address 353, care of this office.

#### **Minnesota Practice for Sale**

My fine country practice in eastern Minnesota is for sale. Community prosperous. Collections have never fallen below 90 per cent. Friendly and ethical competition. Good graveled roads kept open throughout entire year. Address 352, care of this office.

#### **Physician Wanted**

To locate in a city of 600 population in north central South Dakota, in a thriving agricultural community. Twenty miles to the nearest doctor. Office given free of charge. For further information address Secretary, Hosmer Commercial Club, Hosmer, S. Dak.

#### **Practice for Sale**

A \$6,000 cash unopposed practice in town of 500 in Northern Minnesota in Park Region district. Large territory, good school, fine roads, churches, hospital facilities near by. Came here 15 months ago in debt; now going to specialize. I dispense my own drugs. Asking \$500 for drugs and office equipment. Address 348, care of this office.



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## ACUTE INTESTINAL OBSTRUCTION: A CLINIC\*

At the Surgical Amphitheatre of the Cook County Hospital

By WILLIAM R. CUBBINS, B.Sc., M.D., F.A.C.S.

CHICAGO, ILLINOIS

The consideration of the relation of enterostomy to intestinal obstruction was the incentive that started me to work on the problem. Summers, in the *Annals of Surgery*, presented a review in which he gave the history of enterostomies. In the sixteenth century Hollander made an enterostomy following the reduction of a great hernia. Then the method of procedure went through various stages from the making of an enterostomy immediately proximal to the obstruction to the making of an enterostomy in the jejunum at the highest possible point.

In considering the mechanism of the intoxication we may go back to the experimental work of Whipple, Sweet, Dragstedt, Murphy, and Donald V. Baker. Whipple and Sweet said that a proteose intoxication occurs and that this form of intoxication is far more marked in the duodenum than anywhere else. Then Dragstedt made the statement that the underlying factor is an intestinal putrefaction, and he called it a bacterial toxemia. He made many experiments, such as isolating loops, bringing about a complete obstruction, then sterilizing all the loops by the passage of ether over the intestines, and closing them entirely. No symptoms of obstruction followed. On the other hand, the isolated unsterilized loop would cause symptoms of intestinal obstruction. Donald V. Baker, of the Bean Pathological Laboratory, showed that death is

from dehydration. He showed the immense amount of fluid that, under certain conditions, can be extravasated into the bowel.

The next point demonstrated by Baker is the relationship of dehydration to the production of fever. The body reacts by throwing out an immense amount of fluid through the kidneys, accompanied by loss of chlorides and phosphates, and with varying degrees of fever. These conditions he was able to combat successfully by the administration, either intravenously or subcutaneously, of large quantities of Ringer's solution or the normal-salt solution. It seems to me that Baker has found the idea which should guide our treatment.

I want to emphasize if possible the chief and most characteristic symptoms. Time will not permit me to go into the consideration of ileus.

### SYMPTOMS

*Pain.*—The pain is marked. Its character depends upon the completeness of the obstruction and the amount of bowel that is included in the block. The location of the pain is, as a rule, around the umbilicus. The pain may radiate to the epigastrium, to the gall-bladder region, and to the shoulder.

*Nausea and vomiting.*—Nausea and vomiting are practically always present. This does not mean that when nausea and vomiting cease the obstruction has been freed. The vomiting is intractable and does not cease after a few spells, as it may with kidney stones or acute appendi-

\*Presented before the Seventeenth Annual Meeting of the Minneapolis, St. Paul & Sault Ste. Marie Railway Surgical Association, at Chicago, Illinois.

citis or gall-stones. The early and the intermediate vomitus has a brownish-green color and a peculiar indefinite characteristic odor. Later there is the foul fecal odor.

*Location and extent.*—In case of high obstruction which is not complete the patient will pass a little gas. If there is a large area of involvement nothing will pass.

*Tenderness.*—A valuable diagnostic feature is tenderness, which is usually more marked over the point of obstruction and varies with the time that has elapsed since the inception of the obstruction. It varies also with the depth of the obstruction from the surface. It is obvious that with an obstruction deep in the pelvis we would not elicit marked tenderness. Later on, when the proximal bowel becomes markedly distended, there is diffuse tenderness.

*Distention.*—The degree of distention varies with the position of the obstruction. High obstruction may give a scaphoid abdomen. After the first attack of vomiting there may be a marked decrease in the distention. We can reduce the amount of distention by repeated gastric lavage, making it much easier to operate.

*Perforation.*—When perforation takes place there is bubbling of air which may extend up around the liver, causing liver dullness to disappear.

*Gurgling.*—This symptom is of particular value in those cases of peritonitis which do not have any bowel movement for three or four days following operation. We listen to the gurgling and can detect no effort on the part of the bowel to free itself. We diagnose paralytic ileus. We wait until the patient dies and then find that he had an obstruction. Murphy stated that the stethoscope is far more necessary on the abdomen than on the chest, in view of the importance of gurgling. With nausea and vomiting following an attack of that type, we should be chary of making a diagnosis of paralytic ileus until proved paralytic ileus by operation.

*Peristalsis.*—Visible peristalsis varies with the thinness of the abdominal wall and the duration of the obstruction. An obstruction gradual in onset causes a hypertrophy of the musculature of the bowel, which can show itself through a comparatively thick abdominal wall, whereas peristalsis in an obstruction of sudden onset might not be visible through that same abdominal wall. Through the thin abdominal wall any obstruction will show.

*Leucocytosis.*—The white cells vary in number from 10,000 to 23,000. I had one case with a leucocytosis of 27,000,—a straight obstruction

with no perforation. This was not a relative increase of cells due to dehydration for the red count was not increased.

*Temperature.*—The temperature varies from 102° to 103°. The acute collapse from strangulation of a large part of the bowel is followed by a drop in temperature. When there is dehydration the temperature will rise as a rule. Rise in temperature may mislead one into the diagnosis of appendicitis. The temperature varies with the amount of obstruction. With obstruction the pulse is at first slow and gradually goes up.

Here allow me to cite the case of a woman seen on Tuesday and diagnosed intestinal obstruction. There had been three previous laparotomies. Her belly was distended, but she did not appear to be in a serious condition, and so I sidestepped, saying, "I will see her again." The following Thursday I re-examined her, talked about her distended abdomen and the previous operations, and then backed off again. Saturday afternoon I looked her over and operated. She had a few bands with no signs of real obstruction. The next morning she had a dirty bluish-gray color. The case was one of acetanilid poisoning. I should like to know what there is in acetanilid which will produce a distention of the bowels and simulate obstruction. In eight months I saw another case in a man who had had fifteen laparotomies. I became a little suspicious of him, so we washed his stomach out repeatedly. He did not like it and went home at the end of twelve hours.

#### DIFFERENTIAL DIAGNOSIS

In intestinal obstruction the facies is of an anxious type; the nose is drawn, the eyes are sunken, and there is something intangible which marks the case as one of real obstruction. Mark this: *When the facies is not anxious, the individual does not have an intestinal obstruction.* If the patient is in collapse, he is intensely dry. But when he gets over the collapse he moistens up again.

The most common etiology is previous abdominal operations. In the presence of previous abdominal operations and peculiar abdominal symptoms we must rule out intestinal obstruction before making a diagnosis of anything else.

Hernia is the next most common cause. In proportion to its frequency the femoral hernia is the most commonly strangulated.

*Salpingitis and appendicitis.*—I have not gone into the various types of salpingitis, appendicitis, vestigial remnants, and intussusception. Then, too, we must consider cancer, rotation obstruc-



tion, and foreign bodies in the intestines, such as gall-stones and teeth, causing spastic reactions. Then we have the tabetic and lead-poisoning reactions, and the scaphoid abdomen goes with both.

There is still another thing to be included under these paralytic or reflex reactions, and that is any one of the inflammatory conditions. An ovarian cyst without any obstruction will give this.

I have seen only one case of mesenteric thrombosis with obstruction. That was in a heart case.

Then come cholecystitis, perforate ulcer, and any kind of a tumor.

There are changes in the bowel at the point of pressure. It is grayish, grayish-blue, black, or brown, never red. The bowel proximal to the point of pressure is distended, reddened, swollen, and thickened. A strangulated loop manifests all shades from simple red, on through blue, dark blue, reddish-blue, to gangrene. The distal bowel is practically always collapsed and there is no movement in it. Why does it not distend with gas? Why are not those bacteria working there just the same as they are up above where there is distention? That is the thing that one wonders about in connection with the various theories of the development of toxins in the bowel. It is my idea that the process is made up of a combination of the elaboration of the waste products of toil, of struggle on the part of the bowel, and the immense amount of food that is required to enable it to do its work in the attempt to free itself.

The diagnosis should be made just as soon as the belly is opened. The fluid in the belly will be there, red or reddish-yellow. The mesentery frequently dies, when there are mesenteric emboli. I have had three cases in which death occurred from pulmonary emboli, freed by the mesentery. Consequently when the mesentery is red, swollen, and thickened, and we are not sure of our blood vessels, resect that mesentery, making a V-shaped incision.

In the presence of an hemorrhagic diathesis, these exsanguinated, toxic individuals not uncommonly will begin to show little petechial spots which will spread with remarkable rapidity. There is only one thing to do and that is to transfuse.

Deep abscess following operation is not uncommon. To detect this condition rectal or vaginal examinations must be resorted to.

#### TREATMENT

Formerly we said that in mechanical obstructions immediate operation was indicated. We do not say that any more. In a case of intestinal obstruction the thing to do is to start getting fluids into the body in every way, and the worse the case the greater the amount of fluid that should be introduced before starting operative interference. We do not believe that two or three hours' wait is at all material compared with the benefit to be derived from getting a large amount of fluid into the individual. Thorough gastric lavage should be done, because very frequently the softening of the abdomen reduces the distention and makes the case very much easier to handle. Keep the patient warm.

#### OPERATION

The location of the incision should be indicated by the findings, preferably in the midline and preferably below the umbilicus. Find the collapsed loop first. Murphy discovered that principle. Do not allow great loops of bowel to eviscerate. Keep the collapsed loop of bowel under control. We can maul those great loops for half an hour and be as far from home as ever. Trace to the point of obstruction and free with fingers, scissors, or knife.

Deliver the strangulated loop with a portion of proximal bowel. Deliver that and nothing else; keep the remaining portion in the belly. What happens when we deliver these red, swollen and inflamed loops? We have in those tissues an immense amount of blood that is rapidly cooled. That cooled blood is taken to the liver, this constituting the most important factor in the production of shock.

The bowel of this child was intussuscepted. It was the first case I had that was not moribund. But in these cases we can feel the tumor in the child's stomach at a very early period, and it is carelessness not to diagnose the condition. We can look into the belly with the least possible danger—take a look if necessary if in doubt of that tumor. These children will not stand waiting 90 hours. I sutured that bowel parallel to the cecum.

## SURGERY OF THE VASCULAR SYSTEM\*

BY RAYMOND W. McNEALY, M.D., F.A.C.S.

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In explanation of the choice of this subject I might say that for the past three years the surgical services at the Cook County Hospital have so divided the work that certain men are able to do more work along some particular line in which they are particularly interested, and my work has been along the line of blood-vessel surgery. During this time I have accumulated some experience that may be of interest to you. In the beginning I felt it would be necessary for me to do some experimental work on dogs and also some dissection on cadavers, as well as to review the physiology of the blood and blood vessels. This I did for a while rather carefully. But now, as I look back on these experiments and consider the particular problems which have confronted me in the County Hospital, I can only say that we are again brought face to face with the fact that there is no teacher like clinical experience, and not all laboratory methods work out in the operating room.

I shall confine my talk to four topics:

1. Blood-vessel suturing or blood-vessel repair.
2. The necessity for blood transfusion. I shall speak with particular reference to the advisability of using blood transfusion rather than normal-salt infusion.
3. The advisability of concomitant ligation of the main vein with the main artery.
4. The necessity for provisional control in approaching the most difficult blood vessel operations.

## BLOOD-VESSEL SUTURING

In suturing blood vessels I have found the experimental work much more interesting than the practical work. In practice we will find very few indications for blood-vessel suture, that is, anastomosis. And what few we find will be rather difficult to handle unless we have had some particular experience. Blood-vessel suturing, other than anastomosis, we will find consists in the suturing of lateral tears in the larger arteries and veins. In cases where vessels are severed by gunshot or stab or by fragments of bone in fracture cases, it becomes a difficult technical procedure to restore the lumen, especially so if any vessel substance has been lost. If one must dissect

the artery from its bed for some considerable distance, then the sutures must be put in under traction. Finally when we consider the manipulation necessary and the probability of subsequent infection, our prognosis is not so cheerful. Suturing, as we know, fails for the following reasons: First, because of immediate or subsequent thrombosis; second, leakage due to insecure suturing or to infection. Secondary hemorrhages in such cases are generally more formidable than the primary hemorrhages of the original injury.

The suturing of veins is comparatively easy and can be done with little special preparation. It is not absolutely necessary to have special suture material, as it is in arterial work. One may use very fine linen and small round needles or fine twisted silk dipped in sterilized paraffin or liquid petrolatum. In the suture of veins, as in arteries, one should remember a fact that was called to our attention by Murphy, in 1907,—in blood-vessel suturing absolute hemostasis is not to be had immediately along the suture line. If the suturing is reasonably accurate the small crevices will be quickly closed by fibrin clot formation. This is even more noticeable in veins.

## BLOOD TRANSFUSION

The next subject I want to review with you is the necessity for blood transfusion in cases of hemorrhage. We are prone to think of blood transfusion as a heroic procedure rather than as a commonplace and not too difficult a therapeutic measure. Again, we are quite likely to feel that so long as the patient is not *in extremis* from blood volume loss there is little or no indication for transfusion. If one has constantly in mind the physiologic activities of various blood elements, there will be found more rational indications for transfusion. Where large vessels of an extremity are injured and subsequently ligated we must keep in mind that the blood pressure must be maintained at a good level and the blood of such a quality that the tissue needs may be fully met and gangrene avoided.

The next point I want to make is the correct interpretation of subcutaneous injuries of blood vessels with hematoma formation. Here one must remember that the hematoma represents approximately 30 per cent of the blood volume lost, and, although the fluid elements are re-

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absorbed and serve to maintain the blood pressure to a fair degree, nevertheless the immobilization of the cellular elements may endanger the viability of peripheral structures. This leads us to the natural conclusion that transfusion may be, and usually is, of great value in this type of injury.

In this field we should consider the advisability of giving blood transfusions rather than normal-salt infusions. In severe hemorrhages where peripheral vessels have been severed or ligated or amputations done we have first to combat the shock and acute anemia, that is, blood volume loss. Normal-salt solution will be of greatest use. The volume can be restored and blood pressure brought back to somewhere near normal. That may, however, be only a temporary recovery. If now the patient shows the effects of the cellular anemia one is not justified in again resorting to normal-salt infusion, for it will not be followed by the response which was apparent after its primary use. Blood transfusion now becomes imperative. I personally feel that inestimable damage may be done in certain cases by repeated salt infusions.

Blood transfusion has a wide field of usefulness in cases of amputation or in blood-vessel injuries by promoting rapid healing and avoiding infections and sloughs. The vitality of a part depends upon quality of blood supplied, as well as upon the quantity available.

Just a word of encouragement to those who are timid about blood transfusions because of the fuss made over incompatibility of certain bloods. Direct typing (donor's corpuscles and recipient's serum) is a simple procedure easily learned.

As to the best method of blood transfusion, I can only say that from experience at the County Hospital where we change interns every three months, we feel that the citrate method is best suited to the majority of workers. Where many transfusions are done with well-trained assistants the whole blood administered by either the Unger method or that described as the Kimpton-Brown-Percy method is probably even more desirable.

#### CONCOMITANT LIGATION OF MAIN VEIN WITH MAIN ARTERY

Previous to 1913 it was a rather well-founded idea that the concomitant ligation of the large vein with a large artery of an extremity led to gangrene of that extremity more frequently than did ligation of the main artery alone. About 1913 the attention of Makins, the British surgeon,

was called to the fact that in arteriovenous aneurysms when they were tied above and below and the sac which was composed of the anastomosis of both artery and vein was dissected out, they had fewer cases of gangrene developing than in those cases in which they ligated the artery above and the artery below and sutured the vein to preserve its continuity. Then Opell, who had been working with the reversal of the circulation after the method of Wieting, observed that following his attempt at anastomosis of the proximal artery to the distal vein in cases of impending gangrene, the condition improved, but probably not due to the fact that arterial blood passed through the vein, but due to the retardation of the return flow of venous blood. Then one of Makins' associates, Van Kend, did some experimental work in which he showed rather conclusively that if we must ligate the principal artery in an extremity we should at the same time ligate the principal vein. More recently, in 1923, Brooks and Martin, of St. Louis, have done some experimental work along this line which has gone to substantiate the previous opinions of both Opell and Makins.

We will take just a moment to discuss, very briefly, the rationale of this proposition. First, the blood supply of an extremity depends upon the size and number of the arteries supplying the extremity, the size and number of the veins returning blood from the extremity, the rate and propulsive power of the heart, and the volume and character of the blood, plus the metabolic activity of the tissues.

Now, what happens when we ligate the principal artery to an extremity? If we ligate the principal artery to an extremity, the first step we take in the procedure is to shut off the arterial blood going to the part, thereby lowering the peripheral blood pressure. In lowering the peripheral pressure there is a certain minimum beneath which the interchange of substances between the cells and the blood will not take place, and the cells will die in consequence. So we must maintain the blood within this capillary bed at a certain pressure in order to preserve the vitality of the tissues.

Then again, if we ligate a large artery and keep the artery closed for some considerable period of time, this enormous surface of capillaries will collapse for want of blood, and if the capillaries remain collapsed for any considerable period of time they will not be readily reopened for the passage of the circulation, and there will begin a true focal gangrene in the extremity, which will, of course, lead on to a general necrosis or

gangrene. To combat this we can ligate the main vein at the same time we ligate the artery or just before we ligate the artery. If we ligate the vein we shall then have the entire vascular tree full of blood. Our hope is to keep fluid media in the extremity whereby the tissues are supplied with nourishment over that critical period, which is the first twelve to fourteen hours. During this period the vessels at least have sufficient fluid in their lumens to keep them from collapsing. At the end of the first twelve to fourteen hours slight movements of the toes or fingers, as the case may be, will increase the metabolic activity of the cells, and they in themselves will then demand more blood, which will come by way of the collateral circulation, if available. This attraction between cell and blood has been very well described by Bier, who has given to it the name of "*Das Blutgefühl*." That factor has a very important bearing on this critical period after ligation of a large vessel. This is particularly important in the case of the popliteal, axillary, and common carotid arteries. There is no question in my mind but that if we did a concomitant ligation of the internal jugular with the common carotid we should get fewer cerebral changes than we do when we do not ligate the vein along with the artery. Some ligations of the common carotid have been followed by changes in the cerebral cortex, in all probability due to the fact brought out by Bier that the brain is one of the organs of the body which is expected to take care of itself pretty well; there is no attraction for blood there, consequently ligation of the artery leaves the brain without blood in the capillaries. Of course vein ligation has many other indications, but they will not be considered at this time.

#### PROVISIONAL CONTROL BY LIGATURE

The last subject to which I wish to call your attention is the provisional ligation of arteries preparatory to doing our work on the injured blood vessel. As previously stated, the first work I did in preparing myself for this special field was in the laboratory, and there I failed to learn many of the most important facts. That which I now feel is the most important point in all this vascular work is *good provisional control*. If we have an injury, whether it be by gunshot wound or tearing, of a large vessel like the popliteal or the femoral or the axillary, we should first establish a good working program, and in this working program the most important thing is thorough knowledge of our anatomy with a view to obtaining provisional control of the vessel

upon which we are going to do our work. Subcutaneous ruptures of the femoral, popliteal, and axillary arteries are often approached by cutting directly down on the artery and hurriedly scooping out the clot, then attempting to grab the vessel; and I say *attempting* because I have tried such methods. It is *only* attempting, because in the case of large vessels we usually have so much hemorrhage over the field that we are at a loss to know just where the end of the vessel is to be found, consequently we make a grab with a pair of 8-inch forceps and get everything, nerves, muscles, fascia, etc., in our forceps; crushing the nerves and tissues generally and doing a lot of damage that would not have been necessary had we been forearmed with this plan of securing thorough provisional control.

I shall take very little more of your time in talking but will show you a few slides to illustrate what I mean by provisional control, why I believe it is absolutely necessary, and how it can be done.

If the wound in which we are to work is possibly infected, the placing of our provisional ligatures can often be done at such distance that there will be little or no chance of contamination. If we have had any such experiences as I have had in this work I am sure that once we have familiarized ourselves with the method of provisional control we shall be much more likely to open at some distance and put in a provisional ligature in many cases where we now approach the area without this protection.

The provisional ligature I speak of is not really a ligature, and the vessel is not really ligated. I make provisional ligation in two or three ways. The first and simplest method is to take obstetrical tape and pass it around the artery without tying, attach an artery forceps and have an assistant hold it taut. When the force is relaxed the blood will immediately flow through the artery. If necessary otherwise to employ the man holding the tape, it is easy to take a piece of rubber tubing, such as we use for colonic flushing, and by tying the tape over this we can produce hemostasis without injuring the vessel intima.

Another point I want to make is in regard to the suturing of vessels where we do not care to restore the lumen or where we are not interested in doing an anastomosis. I have found that a great deal of difficulty has arisen, especially in aneurysms, in trying to dissect up the main trunk to apply a ligature. There are many men who have never thought of suturing the vessel itself. Sutures will often hold much better than a circular ligature. It is the same principle that Matas



has used in his aneurysmorrhaphy, where he begins at the bottom and sutures in layers, producing his obliterative endo-aneurysmorrhaphy. This has done away with a great deal of dissection and traumatization in trying to get rid of these sacs. By sewing up or plicating these sacs by the Matas method we do away with the hemorrhages which occur as the result of the opening of collaterals into the sac.

Another point is that in all these cases one should leave in drainage. I prefer gutta-percha drainage, not gauze.

One more point I might bring out at this time is in regard to another large group of vessel injuries in which the vitality of the part is jeopardized by ligation of large vessels. In these cases we should not follow the old teaching of putting these limbs absolutely at rest distal to the point of ligation. I believe that these limbs,

especially the hands and feet, should not be elevated unless there is infection, and then I do not know that there is any material advantage in elevation. The limb should be somewhat depressed rather than elevated. We always think of putting it up on a pillow and placing splints on the side to keep it absolutely quiet. I do just the opposite,—lower the leg and put on no splint. I not only keep the foot depressed or the hand down, but keep a therapeutic light over the extremity and advise the patient to move the fingers or toes as much as he can, to keep wiggling them all day long, because there is nothing that will bring blood to a part so quickly as the need for oxidation in these active muscles. So keeping the fingers moving or the toes wiggling will call a good deal of blood to the part, and many times will be just the measure that will prevent gangrene in this class of cases.

## ACUTE PERFORATIONS OF THE ALIMENTARY TRACT\*

BY ROGER T. VAUGHAN, B.Sc., M.D., F.A.C.S.

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My object in selecting the subject of acute perforations of the alimentary tract is mainly to exhibit a device for use in making a diagnosis of these conditions, one so new that many of the profession are not as yet familiar with its workings. It is a method for detecting the escape of free air into the peritoneal cavity as the result of perforation at some point in the alimentary tract. This free air can then be seen in the fluoroscope as a pneumoperitoneum. It is much easier to see this free air in the peritoneal cavity by means of the fluoroscope, especially when the amount of air that has escaped is small than it is to determine its presence by the old method of percussing out the liver dullness. I suppose all of us have found cases in which the liver dullness has been obliterated by free air in the peritoneal cavity. The pathology most frequently producing that condition is ruptured ulcer of the stomach, but we also see free air in the peritoneal cavity following gunshot perforations of the intestines, and especially if the case has gone a day or two without operation. We see it in typhoid perforations and in perforations of the intestine from blunt trauma, we see it occasionally, not often, in stab-wound cases, and once in a while it arises spontaneously without our being able to determine, in the absence of

operation or autopsy, just what its source may be. I have had two of those cases which appeared to be medical in nature and in which the abdominal symptoms did not point toward peritonitis, and yet the *x*-ray showed a large amount of free air. Furthermore, a patient may come with air in the abdomen which has no connection with a ruptured hollow viscus. A woman may have been in the hands of a gynecologist who has been trying to demonstrate patency of the tubes by injecting air through the uterus. But the cases I refer to particularly here are those of acute surgical conditions in the abdomen; and the conditions in which this method is most often of assistance in the diagnosis and handling of the case is perforated ulcer of the stomach or duodenum.

This means of diagnosis would have been of much use to us some years ago when we attempted to determine the presence or absence of perforation of an ileal ulcer in typhoid fever, but now we do not see a case of perforated typhoid ulcer in a period of several months. Ten or fifteen years ago we had plenty of these cases, and one of our great difficulties was in determining whether or not perforation was present. With the fluoroscope that question can be easily handled because it is very simple to put a patient on a wheel-cart, place him before the fluoroscope, and see the bubbles of free air in the peritoneal

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cavity when a perforation is present.

*Slide 1.*—This shows the position of the patient in front of the fluoroscope. The patient is lying in front of a horizontal fluoroscope and the rays pass from behind, forward, and when the screen is lowered in front of the patient's body we will see on the screen the gas bubble in the peritoneum.

*Slide 2.*—Here is a patient lying on his left side; therefore the liver is uppermost, where it is much easier to see the bubble of air between the liver and the parietal peritoneum than would be the case if he were lying on his right side. In those cases in which the patient is not severely prostrated, we may be able to have him in the sitting posture. But in many of the acute abdominal conditions the patients are so ill that there is danger of their fainting if sitting up, so they are usually examined lying down.

*Slide 3.*—In cases of gunshot wounds of the belly the most useful position is the prone, when one can turn the patient around more easily and have the rays coming from below upward, thus localizing the bullets in the abdomen. We must know where to make our incision if we are trying to handle all the viscera that are injured, also if we have two bullet wounds in the abdomen, as I had last night in the case of a colored girl. Were the two bullets in her, or did one bullet go clear through the liver? There was only one bullet, and it had passed through, as the fluoroscope showed. We generally do not operate on gunshot injuries of the liver. Crushing injury of the liver is another story. Gunshot wounds of the liver usually do as well unoperated as operated on. This girl last night had fluid in the belly, some bile had poured out, but not enough to give her bradycardia. By the expectant treatment of such an injury we do not have a 10 per cent mortality. We have a higher mortality in the cases operated on.

*Slide 4.*—A cross-section through the trunk slightly to the right of the midline, taken from the "Army Manual." In a case of air in the peri-

toneal cavity, when the patient sits up with his body in that position the air collects between the liver and the diaphragm, when, instead of there being only a potential space between the diaphragm and the liver, it is a real space and may be very large, the liver pushed away down and, on the other hand, the lung may be compressed. If, now, we can imagine this picture turned around in the other direction and the patient lying on his back, then the gas will collect up here near the liver if that be the highest point. In other words, the gas will always seek the highest point in the abdomen. In the obese patient it tends to collect around the umbilicus, while in the patient with a scaphoid abdomen it tends to be up underneath the ribs.

*Slide 5.*—A diagram showing the abdomen with the patient lying on the left side, right side uppermost, where there is no perforation. All the air that is seen is in the coils of the intestines. Above is the liver which comes flush with the peritoneum of the anterior abdominal wall.

*Slide 6.*—This shows the patient lying in the same position, but with free gas present. Here the gas in the bowel is lying below the free air bubble in the peritoneum.

*Slide 7.*—This is of a normal individual in the upright position. Normally that is the way the diaphragmatic line looks. On the left side we will always see a little gas bubble in the stomach.

*Slide 8.*—Case of perforated peptic ulcer, patient in the upright position. This tiny black line is the diaphragm on the right side, here is the diaphragm on the left side, and we will see in the dome of each side of the diaphragm that tiny little sickle of gas.

*Slide 9.*—This is an extensive pneumoperitoneum, the case not operated on. Here is the diaphragm away up here on the left side, the gas extending at least down to here (indicating). There is gas inside the gut, but this is free gas on the left side, and there is also free gas on the right side. The patient was radiographed in the upright position.

## THE DIFFERENTIAL DIAGNOSIS OF PULMONARY TUBERCULOSIS AND EXOPHTHALMIC GOITER\*

By C. A. McKINLAY, M.D.

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It is hardly necessary to dwell upon the cardinal diagnostic points of pulmonary tuberculosis

as enumerated by the National Tuberculosis Association. When certain of those signs or a combination of them obtain, the diagnosis is established. However, cases not infrequently oc-

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cur in which insufficient or confusing symptoms make it difficult to decide between pulmonary tuberculosis and exophthalmic goiter. It is concerning points that will aid in establishing or ruling out the diagnosis of exophthalmic goiter in such doubtful cases that this paper is concerned.

Fever stands as a prominent symptom of pulmonary tuberculosis and is defined as important if  $99.6^{\circ}$  or above in the afternoon in women or  $99.0^{\circ}$  in men. While individual cases of pulmonary tuberculosis may be afebrile at certain stages even though the process is active, a great majority have undoubtedly shown fever over a part of the course of disease. While it has been our impression that fever as above defined did not usually exist in exophthalmic goiter, actual facts from the records of observed cases were sought for. In twenty-five consecutive cases of exophthalmic goiter and adenoma with hyperthyroidism the temperature taken at 4 P. M. was quite consistently below  $99.0^{\circ}\text{F}$ . Infrequently the temperature would reach  $99.4^{\circ}$ ; when it mounted to one degree or more above normal, the rise was accounted for, except in one instance, by intercurrent upper respiratory tract infection. One patient with an associated arthritis showed elevation of temperature of over one degree F. It is noticeable that the temperature records of these patients with severe type of exophthalmic goiter were quite characteristically normal. Aside from the influence of intercurrent infections, fever was not present and the temperatures at 4 P. M. were below  $99.4^{\circ}$ . In the crises or terminal stages temperatures may be elevated slightly, but confusion in diagnosis does not occur at that time. It should be emphasized that in the patient with fever as above interpreted, infection rather than thyroid toxemia is much more frequently the cause. This is in keeping with the finding of Boothby<sup>1</sup> at the Mayo Clinic, who states that the temperature curve is not elevated above normal in exophthalmic goiter except in the terminal stages. Insufficient emphasis has been placed upon the study of the temperature chart which, if it reveals unexplained afternoon elevation of  $1^{\circ}\text{F}$ . or more, speaks for infection.

While increase in the pulse rate exists in both pulmonary tuberculosis and hyperthyroidism, the general correlation of the pulse with the temperature increase in pulmonary tuberculosis should be mentioned, also the greater and more constant tachycardia attained in exophthalmic goiter. Of special interest has been the group of cases of

pulmonary tuberculosis, which with arrest of the process and subsidence of the temperature to normal showed persistent tachycardia. On investigation, hyperthyroidism has not been found as the cause; the tachycardia has evidently been an aftermath of the pulmonary infection. Mention should be made of the cardiovascular changes with the arrhythmia and dilatation that may occur in hyperthyroidism of long standing, particularly associated with adenoma, and the absence of such changes in tuberculosis. In such cases dyspnea may stand out prominently as a source of complaint.

In the realm of the nervous system most valuable information is given concerning the presence of exophthalmic goiter. Constantly there is present a stimulating influence giving rise to quite characteristic signs and symptoms. Thus the patient shows early increased cerebral stimulation and purposeless movements of the extremities, and fine tremors of the hands are readily demonstrated. Repose cannot be maintained for any appreciable length of time. Marked increase in excitability, irritability, emotional reactions, and mental alertness may be present; on the other hand, where the disease process is less marked, such reaction may become apparent only after provocation by the examiner. Contrasted with this, the toxemia of tuberculosis, though sometimes tremendous in degree, does not typically cause such responses. Indeed the patient is often asthenic rather than sthenic, and has retarded movements rather than increased movements. Fine tremors of the fingers which are constant in hyperthyroid states may be quite lacking in the tuberculous.

Profound muscular weakness as shown by the quadriceps test often exists in the hyperthyroid patient, but in their stimulated state they have the will to accomplish tasks beyond their actual power. On the other hand, in the tuberculous patient weakness and fatigue may be quite unassociated with any increased excitability.

The descriptive term exophthalmic suggests, of course, the importance of eye signs in hyperthyroidism. Staring and later exophthalmos have been declared by Plummer<sup>2</sup> to be the characteristic signs of exophthalmic goiter contrasted to adenomatous goiter with hyperthyroidism, and with proper association they define the disease entity. Warning should be given of the possibility of confusion arising from the interpretation of normally prominent eyeballs as abnormal. Thus a patient with colloid goiter and prominent eyes may be mistakenly said to have exophthal-

mic goiter; likewise in the tuberculous, the presence of prominent eyeballs might suggest exophthalmic goiter were it not found that the eyes were always of that nature and that the stare, lid lag, and delayed convergence were absent. Purposely we have omitted description of physical changes in the thyroid gland as of important differential value, for while the hyperplastic exophthalmic goiter is of firmer consistency and may not be as large as the soft colloid goiter, sometimes co-existing in the tuberculous patient, at times little if any differential value may be obtained from palpation of the thyroid gland.

Under the head of nutritional are included those changes which are quite constantly present in exophthalmic goiter. As is well known, increase in the oxidative processes of the body occurs, usually within 20 to 100 per cent above the average normal. In tuberculosis conflicting reports exist, but the work of McCann and Barr<sup>3</sup> stands out as the most accurate. These observers checked the chemical by physical measurement of heat. During periods when the body temperature was normal, they found that tuberculous patients had a basal metabolism within normal limits or slightly above. As body temperature rose the metabolism increased so that in a patient whose rectal temperature was 104.0° F. the metabolism might be 30 per cent above the average normal value. Therefore, during afebrile periods a basal metabolism distinctly above the average normal indicates not tuberculosis but exophthalmic goiter and thereby aids in differentiating the two diseases. Of considerable value also is the corollary that with the increased heat production of the hyperthyroid patient there is often a large food intake, up to 5,000 or 6,000 calories, without weight gain and often with weight loss. The toxemia of the tuberculous patient does not stimulate increased heat production except that due to fever itself. The

weight loss of the tuberculous patient when afebrile is often due to lowered food intake and seldom associated with greater food intake as in exophthalmic goiter. Not infrequently the tuberculous patient can be caused to gain weight; seldom can the hyperthyroid patient, at least in the periods of marked activity, be made to gain any appreciable weight with high calorie diets.

In summary then, fundamental differences in the disease processes should be kept clearly in mind; even when minimal these distinguishing features aid in declaring the diagnosis. The basic differences to be stressed are that exophthalmic goiter represents a tremendous stimulation of unknown origin, affecting the central nervous system, giving rise to alertness, cerebral stimulation, excitability, irritability, emotional changes, increased bodily movements, and tremors with the characteristic eye signs mentioned above, and also tachycardia. In addition, this stimulating factor influences the oxidative processes of the cells of the body, increasing the metabolism well above normal limits.

Contrasted with this should be the emphasis of tuberculosis as an infection, with pyrexia, and with the absence of increased oxidative processes in afebrile periods. The influence of the toxemia of tuberculosis upon the central nervous system stands likewise in direct contrast with its weakening and exhausting effects and without increased excitability and emotional reactions characteristic of the other process. Needless to mention, the physician best interprets who studies each individual patient carefully, who realizes the difficulties encountered, and who recognizes the need for thorough methods of diagnosis.

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## MODERN ASPECTS OF TUBERCULOSIS AND TREATMENT OF TUBERCULOSIS—PART III—Continued

### HEALING, PROGNOSIS AND PREVENTION

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MINNEAPOLIS, MINNESOTA

#### IX. THE HEALING OF TUBERCULOSIS

The day of debate about healing of tuberculous processes has passed. Not long ago it was believed that every tuberculous lesion leaves

for life evidence of its existence upon the involved organ in the form of a scar. To-day we know that tuberculous processes may heal even so completely as to leave no demonstrable trace of



their existence. In fact as early as 1694 Richard Morton said: "And without doubt the breeding of these swellings is so frequent and common that a Consumption of the lungs would necessarily be the common Plague of Mankind, if those swellings did not vanish, or were not removed by Art as easily as they are bred at first; And indeed I have been used to think, not without reason, that as the more Benign Tubercles are wont to go off of their own accord, and that quickly, so none of them lay the Foundation of this great Disease, of which I am now treating, but only those which are in some degree Malignant, and ill-natur'd, and that are wont to putrefie sooner or later from some peculiar quality in their Nature, from what part soever of the Body they have their original." Nearly a century ago Williams said: "I cannot bring morbid anatomy to prove the possibility of a cure in the earlier stages of phthisis; but I have the history of several cases in which the signs render it extremely probable that some of the depositions, which form the first stage of consumption of the lungs, had been removed by absorption." In fact long ago Rokitansky, after performing many thousand autopsies, concluded that large numbers of persons recover from unmistakable tuberculous lesions. Since that time pathologists everywhere have confirmed for the most part the findings of Rokitansky. But, obviously, the pathologist always found evidence of the tuberculous lesion in the form of fibrous tissue or calcified deposits. As early as 1891 Dr. E. L. Trudeau isolated a strain of tubercle bacilli which has been perpetuated to the present time. This strain has a low virulence when inoculated into the bodies of animals. In fact lesions produced by it heal spontaneously. Although it was known that animals, such as guinea-pigs, recover from disease produced by this strain of tubercle bacilli it was left for Dr. L. U. Gardner to work out the histological mechanism of the process of healing. His work, published in 1922, was so convincing as to leave no doubt even in the minds of the most skeptical. He says: "Thus it has been demonstrated that caseous tubercle can heal by resolution. That the animals were once infected is beyond doubt, for they have all reacted to an intradermic tuberculin test; that the lesions have not been missed in the choice of blocks is shown by the large number of sections selected from the same animal with the aid of a hand lens. Moreover, at the height of the disease the pleura is studded everywhere with tubercles a millimeter in diameter. As time progresses these lesions shrink

in size, become fewer, and finally disappear completely. This sequence of events has been observed, not only in a small series of animals in this experiment, but repeatedly in the course of many experiments in which this strain of tubercle bacillus has been used to infect guinea-pigs by the inhalation method." In writing editorially of Gardner's work, A. K. Krause says: "The article by Gardner which appears in this issue is important because it calls attention to the fact that specific tuberculous changes, of a proliferative character, can resolve, heal, and disappear. It is important because there exists a certain rigidity of opinion to the contrary, which, while admitting the healing of tubercle, insists that the latter must leave its scar.

"That healed tubercle does frequently leave a permanent record in once infected tissues is sound pathological doctrine, but that it always does so is not borne out by facts, clinical or experimental. It would seem that Gardner is perhaps too timid in not putting forward the opinion that complete obliteration of tubercle is a common event; his specific limitation of the phenomenon to the changes brought about by weakly virulent bacilli suggests an ultra conservatism. Yet several well-established data would leave little room to doubt that the process which he describes goes on irrespective of high or low invasiveness of the germ."

Since the healing of tuberculosis becomes so complete in animals, the question arises as to whether a similar process does not take place in the human body.

Tuberculous processes elsewhere in the body, particularly in the abdomen, have been observed during laparotomy, and at some subsequent time another laparotomy revealed no trace of these tuberculous processes.

Every clinician who treats any considerable number of tuberculous patients sees many who have unmistakable tuberculous lesions in the lungs, which gradually disappear, leaving no signs when the patients are restored to good working capacities. But here the detailed study of pulmonary tuberculous processes is not so easy. However, with the tremendous help which has recently come from the *x*-ray much more evidence of the healing of tuberculous processes has accrued. This evidence has been obtained through the careful study of serial *x*-ray plates. Stewart, Amberson, Webb, and others have shown beyond doubt that unmistakable tuberculous lesions may in the course of time disappear so as to leave no *x*-ray evidence of

their past existence. Along with the disappearance of shadows comes in most cases a restoration of working capacity. The healing of tuberculosis in infancy and childhood has been much discussed, but Harms has pointed out that pulmonary lesions may heal and completely disappear in these ages just as in adult life.

The remarkable studies by Krause and his co-workers have added much to our knowledge and have completely changed our views concerning certain phases of tuberculosis. For example, after most careful observation of the same cases through periods of fifteen to twenty years he has shown that multiple tuberculous lesions may heal so completely as to leave no trace of their existence and, what is perhaps more striking, has shown that along with healing the hypersensitiveness to tuberculin may gradually fade out and finally completely disappear. One could not ask for more convincing evidence of the healing of tuberculosis. Krause has shown that healing, obliteration, and sterilization of tuberculous processes are common.

One must not get the impression that all cases of healing are by complete absorption, indeed many heal by fibrosis and calcification. But that tuberculosis does heal and heals permanently is a fact established on sound scientific evidence. Perhaps in the whole history of the treatment of tuberculosis there has been established no other fact so encouraging to the physician and the patient as the fact that tuberculosis does heal. With this fact firmly in mind we may proceed to the treatment of tuberculosis with the assurance that at least some of our efforts will bear fruits.

#### X. THE GENERAL MANAGEMENT OF THE TUBERCULOUS PATIENT

The proper management of tuberculous patients is extremely difficult. Every case offers obstacles, some of which on first thought seem to be almost insurmountable. It is a great asset to the physician to have the patient's point of view; to know precisely how he feels when first told that he has tuberculosis and to be so thoroughly in sympathy with him as to gain his confidence and be able to persuade, comfort, encourage, and strengthen him for the fight. Furthermore, the physician must have good judgment as to the significance of the various types of tuberculous lesions and as to the general and special treatments which each one requires. The financial status of the family and the mental development of the patient are factors which must be given due consideration in out-

lining the treatment. A special study must be made of the temperament of each patient. A statement which is perfectly safe for one patient may do definite harm if made to another patient of a different temperament.

The management of the case depends, to a considerable extent, upon whether the patient has minimal, moderately advanced, or far advanced disease, and furthermore, whether the disease is active or inactive.

Every patient who has *demonstrable clinical tuberculosis* in an active state, regardless of the extent of the disease, should receive a carefully outlined course of treatment. It is true that some cases of clinically active tuberculosis heal spontaneously. Occasionally a patient is seen with unmistakable tuberculosis who refuses treatment and continues to carry heavy work, and still overcomes the disease. Some patients with spontaneous healing state that their physicians diagnosed conditions which never existed, while others attribute their healing to the work of members of cults. While spontaneous healing of active tuberculous lesions does occur frequently a great number of cases without treatment will continue to have progressive disease and later die of tuberculosis; therefore there should be prescribed for each patient the course that observation and experience have proved to be safest. Nothing has been more satisfactory in the general management of tuberculous patients than the dietetic-hygienic treatment in which there are two very large and several small factors. The two very large factors are first *regulation of energy expenditure* and second *medical and nursing supervision and education*. The smaller factors include proper foods and fresh air. Each of these may be likened to medicine used in other diseases and should be prescribed by physicians. Indeed, it is unfortunate that these factors are so common that laymen and members of medical cults often feel perfectly competent to prescribe them, but without adequate knowledge of tuberculous disease and scientific application of the factors just mentioned, they rarely succeed except in cases of spontaneous healing.

The question as to whether the tuberculous patient should be treated in the home or in an institution has long been discussed. I am convinced that ideally most patients should be treated in both places. That is, every patient should be placed upon home treatment as soon as possible after the detection of the disease. Then at the earliest possible time the patient should be placed in a hospital or sanatorium for a per-



iod of intensive training in the nature and treatment of tuberculosis. Three to six months of this training should suffice and immediately following that the patient should be returned to his family physician for the post-institutional treatment. To treat tuberculosis successfully requires a long period of time and patient patients should hope to occupy sanatorium beds of which there are far too few, until recovery is complete. Dr. Hawes of Boston says:

"The whole question of the results of our sanatorium treatment is so intimately bound up with the treatment of the patient after leaving the sanatorium—after-care work—that it is difficult, if not impossible, to tell which factor is most important, treatment in the sanatorium or the treatment of the patient after he leaves the sanatorium."

He also says: "Those of us who are interested in stamping out tuberculosis are gradually coming to realize that no system of sanatoria, no matter how complete and elaborate as to location, number of beds, surroundings, etc., can by itself solve the tuberculosis problem. We have come to realize that the patient's stay at the sanatorium or hospital, short or long, as the case may be, is but an incident in a course of treatment the most important parts of which are before the patient enters, and particularly after the patient has left, the sanatorium." In discussing methods of caring for tuberculous patients after they leave the hospitals Dr. Hawes says: "The third method of carrying on after-care work, and undoubtedly the best, is one by which all agencies, the sanatorium, state and local boards of health, private physicians, and state and local nurses, co-operate to bring about proper supervision of the patient."

This is the whole truth, therefore all patients, sooner or later, should be treated in the home. Too often it has been said that most practicing physicians are not capable of directing the modern treatment of tuberculosis in the home. It

is true that most medical schools have in the past neglected the teaching of tuberculosis, but upon the recommendation of the National Tuberculosis Association some departments of medicine in medical schools are creating divisions of tuberculosis, thus giving those members of faculties especially interested in this disease opportunities to teach, not only its diagnosis, but also its treatment and prevention. This provision should properly equip the physician of the future. But how about those already in practice who did not have its advantages? The modern treatment of tuberculosis is of such a nature that any physician possessing good judgment because of his training in the treatment of other disease is capable of learning in a short time all there now is to know about the treatment of this disease. There are many places where the physician in practice who received no tuberculosis training in school may spend a short time in observing and learning the modern methods. One of the great mistakes that have gotten into the minds of the people is that a small group of institutional physicians together with a small group of physicians in private practice especially interested in tuberculosis can ever bring this disease under control. It is impossible! The task is stupendous and requires the help of all physicians everywhere.

Obviously, there are patients who cannot be ideally treated. Some have no homes, while others have home conditions so poor as to make successful treatment there impossible. Some cannot go to institutions, while others will not be convinced that they should go to institutions. Therefore, there is a small group who must receive all of their treatment in institutions, while another small group must receive all of their treatment in homes. Every physician will meet patients belonging to these various groups and must treat them or try to arrange for their treatment.

Therefore, inasmuch as every physician will be called upon to treat tuberculosis in the home he should prepare himself to do it well.

## PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

Meeting of March 9, 1927

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, March 9, 1927, at 8 P. M. Dinner was served at 7 P. M.

The meeting was called to order by the President, Dr. F. E. Burch. There were 33 members present.

The minutes of the February meeting were read and approved.

The President appointed Drs. Head, Mann, and Wilcox a committee to draw up resolutions on the death of Dr. A. W. Abbott for report at the next meeting of the Academy.

After some discussion a motion was carried

that the report of cases be given after the reading of papers, except that when patients were present the case may be reported before the papers are read.

Dr. E. M. Hammes (St. Paul) presented a patient and reported the history of a case of von Recklinghausen's disease with intracranial complications, as follows:

The family history is negative. No member of the family had any skin tumors, moles, or freckles.

The patient stated that since childhood he has had multiple small nodules over his body, especially the back and lower extremities, without any special change in their size until two years ago. At that time he noticed that they were gradually becoming larger and more numerous. He began to stagger, had occasional headaches and emesis, and gradually developed a weakness of the *left* half of the face. Along with this he noticed some buzzing in both ears, especially in the *right*.

A lumbar puncture was done. The spinal fluid was normal throughout except for a positive Wassermann test. (Evidently a laboratory error.) The blood Wassermann was negative. He was placed on antiluetic treatment, without any benefit. He is gradually growing worse and slowly losing in strength and weight—about 30 pounds in two years.

Clinically he presents multiple nodules over his entire body—on the head, extremities, and trunk. These vary from a minute nodule to tumors the size of a walnut. They are of moderate consistency, quite freely moveable, and not tender. He furthermore manifests small bluish pigmented areas, which are supposedly the forerunners of the developing tumors.

Neurologically he has a positive Romberg, walks with a staggering gait to the left, and has involvement of the left fifth, sixth, and the peripheral left seventh. He complains of buzzing in both ears, more marked in the right, but his hearing is quite normal. There is ataxia of the left upper extremity. All other findings are normal. He presents no bony changes or curvatures.

A report of one of the tumor masses examined by Dr. E. T. Bell, Pathologic Department of the University of Minnesota, shows that the tumors are neurofibromata.

This patient evidently has a multiple neurofibromatosis with a tumor involving the left eighth, producing a neurological picture of a left cerebello-pontine angle tumor. There is perhaps also some involvement of the right eighth nerve, which would explain the marked buzzing in the right ear.

Dr. H. Z. Giffin (Rochester) read his Inaugural Thesis entitled "Splenectomy."

#### DISCUSSION

Dr. MANN (Minneapolis): This is certainly a most interesting paper, very well presented, and on an interesting subject. There are two or three things I would like to ask about.

1. I wish, if Dr. Giffin can, he would tell us a little more about the relation of splenectomy and hemophilia. In hemophilia there is often a deficiency in the platelets and after splenectomy on any

of these patients there is an increase in the platelets.

2. My other thoughts run to the physiology and physiological pathology of the results of a large spleen and its effect on the blood. What is it that gives the hemolysis a greater tendency, and where does it come from? There is a more easy destruction of the blood and the spleen goes ahead and does that too.

3. Why is the bone marrow stimulated? Is it a toxin that stimulates it; is it a hormone; or what is it?

I would like to have Dr. Giffin go over the real things that the spleen does when it behaves properly.

Dr. JUDD (Rochester): Splenectomy may be a fairly simple operation in cases in which the spleen is not too large or too adherent, but, on the other hand, it may be a most difficult procedure. The chief difficulty results from the adhesions which may form between the spleen and the stomach and the colon, the spleen and the omentum, the spleen and parietal peritoneum to the outside, and especially the adhesions that may be present between the upper pole of the spleen and the under surface of the diaphragm. In some cases it is necessary to open into the capsule of the spleen in order not to traumatize the other tissues in freeing the organ. The oozing adhesions which may be left must be sutured over either on the diaphragm or the parietal peritoneum. It is not often that one has great difficulty with bleeding from the pedicle of the spleen. The veins may be very large as a result of compensatory circulation, particularly in cases of cirrhosis, and it is in these that hemorrhage may be difficult to control. Dr. Griffin's report shows the number of hospital deaths in each group. In most of them it resulted from hemorrhage or thrombosis of the splenic veins. Many of these patients were operated on some years ago, and with the developments in technique which have taken place certain of these difficulties could now be overcome.

Dr. HAMMOND (St Paul): Last week I had an opportunity to examine a young man on whom I had done a splenectomy six years ago. That was a traumatic spleen, and he had been perfectly well up to that time. The blood picture now is very interesting. He was operated on January 23, 1921. He lost a great deal of blood and had a marked secondary anemia. On the 25th the blood picture was: r.b.c., 3,500,000; w.b.c., 16,500; and Hb., 58 per cent. Late in February another count showed Hb. 45 per cent; r.b.c., 2,650,000; and he still had a leucocytosis of 12,000; polys., 68 per cent, large lymphos., 14 per cent, and small, 18 per cent. Six years after (he is now 23 years old) he is a very healthy young man. His Hb. is 100 per cent; r.b.c., 4,600,000; w.b.c., 8,000; polys. 61 per cent; lymphos., 34 per cent; and eosin., 1.5 per cent. In 1923 he had several acute attacks of tonsillitis and had his tonsils removed and got along nicely. At present there is no glandular enlargement. Since then, also, he has been exposed pretty thoroughly to tuberculosis. He was married during this time, and his wife died of tuberculosis. He seems to resist infection very well.

Dr. L. C. BACON (St. Paul): I do not know that this case should be injected in a discussion of



splenectomy except for the emphasis on splenectomy in hemorrhagic purpura and to mention the importance of diagnosis.

About two years ago a young woman came to me with all the symptoms of an advanced hemorrhagic purpura. The hemorrhagic blue-black spots had first appeared about three months before and had increased to an alarming degree. The accompanying exhaustion was marked and progressing. Hemorrhages of mucous membranes were frequent. I cannot give, off hand, the laboratory report of blood findings but remember that it did not give me grounds for determining the source of the trouble.

In this young woman's case there were definite pus tubes, and their removal seemed indicated. After their removal the purpura cleared up rapidly, and restoration to health was complete.

This case would indicate that focal infections should be searched for in these cases.

DR. JUDD: Dr. Sweetser asked about the cause of the adhesions. I cannot say what causes them, but I do know that they have been so extensive that we had to stop the operation without removal of the spleen on one or two occasions. It is possible that they result from splenitis or from pressure. I think Dr. Sweetser has been fortunate in not encountering one of these cases. He has something coming to him.

DR. GIFFIN (closing): We have been afraid to do any sort of operation on patients with hemophilia. The question of diagnosis is the most important one so far as splenectomy is concerned. In cases of hemophilia the platelet level, taken over a number of days, is within normal limits. In cases of hemorrhagic purpura, on the other hand, the platelet level on repeated counts is usually below 100,000.

With regard to the relationship of infection to hemorrhagic purpura; there is pretty good evidence that hemorrhagic purpura is due to an infection that localizes in the spleen. The spleens that have been removed may be said to show an acute splenitis. Before the days of splenectomy we attempted to remove all important foci of infection. Now, however, the spleen is removed and focal infection cleared up afterwards. A few cases in the literature seem to demonstrate that unless focal infection is eliminated, there is a slight tendency to recurrence of the features of the disease.

We have had no experience with splenectomy in acute fulminating purpura. There are two cases in the series in which the history was of only two months' duration; these patients did as well as the others. There are, undoubtedly, cases of purpura in which the features of coagulation are slightly different from those in thrombocytopenic purpura, and it is likely also that there are cases of such severe grade that no method of treatment will be effective.

There is no definite information as to just how removal of the spleen stimulates the bone marrow. It was thought at first that this might be compensatory to the anemia that results following experimental splenectomy, but the hyperplasia of the bone marrow seems to be more marked than would be necessary for this purpose, and persists for a much longer time than the anemia. A definite change

in the size of the liver and in the function of the liver has been demonstrated in some of the cases of Banti's disease. The liver has become smaller, and the ascites which was present before splenectomy has disappeared. Functional tests on the liver have been done too recently to make it possible to have accumulated much evidence in this regard.

The spleen may be considered in its relationship to the liver, to the vascular system, and to the hematopoietic system. Both functionally and in the quantity of blood in the portal system, its relationship to the liver is shown. The recent work of Barcroft and his associates, which shows that blood is extruded from the spleen during exercise, indicates a function with respect to the total quantity of circulating blood. Its effect on the destruction of various blood cells and its anatomical structure as a lymphoid organ indicates its relationship to the hematopoietic system.

Dr. S. E. Sweitzer (Minneapolis) reported a case of paresis treated with malaria.

Wm. B., aged 33, salesman, was admitted to the hospital on January 9, 1926. He gave a history of nervous breakdown five months previously. The patient had chancre four years ago (1921) and received active treatment with neosalvarsan and mercury for one year. Since his breakdown he has been unable to work. He has been unable to think or remember anything since this breakdown as is evidenced by the fact that he took his child downtown several days before admission and lost the child. During his first night in the hospital the patient became unmanageable and had to be restrained.

The physical findings were negative except for two plus hyperactive knee jerks, positive Babinski, and slight systolic murmur over the apex.

The blood Wassermann was positive. The red, white, and differential counts were normal. The spinal fluid was clear, colorless. Nonne 1 plus, 20 cells per cu. mm., curve 2,455,521,000. Spinal fluid Wassermann was positive.

The diagnosis was paresis.

Treatment: The patient was inoculated with 15 c.c. of citrated blood from a malaria patient on January 15, 1926, and began having chills January 20, 1926. Malaria was found on blood smear January 25, 1926. Blood urea during the course of the treatment was 21.15 mg. per 100 c.c. of blood on two occasions January 27, 1926 and on February 1, 1926. The patient was allowed to have twelve chills and then the malaria was interrupted with quinin, grs. v, t.i.d.

He was discharged on February 13, 1926, and his condition had improved markedly.

Follow-up history: At the present time the patient is working daily selling insurance. Since taking the treatment his appetite has increased and he has gained in weight. To date he has taken six neosalvarsan treatments since his malaria inoculation.

#### DISCUSSION

DR. SWEITZER: I might say a few words about the *modus operandi* of the malaria treatment. It is interesting to speculate on how the malaria causes improvement in these cases. Dr. Schamberg, in Philadelphia, inoculated rabbits with syphilis and

then put them in a hot bath for a short time. If left in the hot bath so their temperature went up to 104° for an hour or more, syphilis was prevented. The elevation of temperature to a high point over a considerable number of hours probably does a great deal of good in this condition. Typhoid and other foreign proteins do not give such good results probably because they do not keep the temperature up high for a long enough time.

In Vienna they are treating all cases of syphilis with malaria, giving one course of neo-arsphenamine; then malaria, and another course of neo; and possibly a course of bismuth.

Dr. E. S. Judd (Rochester) reported two cases as follows:

CASE 1.—Colloid Carcinoma of the Transverse Colon, Splenic Flexure and Omentum.

Case No. 552,592, a widow, 65 years of age, came to the Clinic on June 1, 1926, complaining of a mass in the left side of her abdomen which she had discovered six weeks previously. She had had practically no symptoms except a little dull pain at times. Though she had lost 58 pounds in the past year her appetite had only grown poor recently. She had had no trouble with her stomach and no bowel symptoms. Her family history was without indicative incident.

She was an undernourished elderly woman of somewhat anemic appearance. A large, movable, irregular mass occupied the entire left upper abdomen; the area was not tender, but was tympanous. Regional adenopathy was lacking. She had a 59 per cent hemoglobin, with 3,710,000 erythrocytes and 9,700 leucocytes. The blood Wassermann was negative, and urinalysis was normal. The roentgenogram of the colon after a barium enema showed a large filling defect beginning at the splenic flexure and extending well across the transverse colon, suggesting an extensive lesion. A diagnosis of a left abdominal tumor, probably a carcinoma of the splenic flexure, was made and an exploration advised but not urged.

On June 8, 1926, under local and ethylene anesthesia, the abdomen was opened through a left rectus incision. The mass proved to be a large colloid carcinoma of the transverse colon, splenic flexure, and omentum, which had been matted together forming the tumor. However, this was the only sign of malignancy, and the mass was movable and could be brought to the outside of the abdomen, so the stomach was dissected free from the transverse colon after ligating the vessels in the gastrocolic omentum without serious interference with the circulation. The left half of the transverse colon, splenic flexure, and the adherent matted omentum were then resected, and the whole mass removed in one piece. Curved clamps were then applied to the cut ends of the bowel and these ends were left hanging outside of the abdomen as a modified Mikulicz operation. A small catheter was introduced into the proximal loop of the colon to relieve the obstruction. A large split rubber tube inserted for drainage was brought out through the left flank.

Post-operatively she was given morphine and subcutaneous saline administered for the first forty-eight hours, then water was taken by mouth, beginning gradually at first. On the fifth post-operative

day the patient passed gas and fecal material through the catheter and was in good general condition. She left the hospital on the twenty-sixth post-operative day, and went home for six weeks. On her return, August 20, 1926, we applied clamps preparatory to closure of the colostomy. She also had a moderate amount of nephritis. On September 6, 1926, the colostomy was closed under local anesthesia. She returned recently with a small persisting sinus in the left hypochondrium. In the interval she had gained considerable weight and has been entirely well in spite of the fact that she had a very extensive malignancy in June, 1926, when the first operation was performed. The colonic fistula was closed February 3, 1927. When dismissed she was having slight drainage from her wound. Her bowels were moving normally.

Comment: This case of colloid carcinoma of the transverse colon and splenic flexure is of interest because it illustrates a large group in which the malignant disease develops into a huge tumor and yet remains operable. Undoubtedly the malignancy was of low grade. The growth was easily separated and the entire malignant process removed en masse. It was not advisable to leave the mass on the outside of the abdomen as is done in the regular Mikulicz operation because it was too large a tumor. After the entire dissection had been completed clamps were placed on the colon and the growth removed, interfering as little as possible with the circulation to the mesocolon. We were not sure that the circulation in the limbs of the remaining colon was sufficient to allow healing so it did not seem advisable to attempt an immediate anastomosis and, instead, the clamps were left on the proximal and distal ends and about two inches of each loop were prolapsed through the abdominal wound. The abdominal wall was then closed quite snugly around these two pieces of bowel. In our experience this plan of modifying the Mikulicz operation has been extremely satisfactory and we use it frequently in just such cases as this, and in those in which the growth is ulcerating or where there is any question about the perforation of the tumor. When employing this procedure or the regular Mikulicz operation, it is a good plan to make a small opening in the proximal limb of the colon two or three inches above the growth or above the clamp and then pass a small catheter into the colon through this opening establishing a catheter colostomy. If this is done it is not necessary to change the dressing or disturb things for a week or ten days as the catheter allows the gas and some feces to escape and prevents distention. This has been a most valuable adjunct in our cases.

CASE 2.—Malignant Polyp of Cecum.—A522,295, J. J. C. presented himself for examination September 4, 1925. His family and marital histories were without significance. An appendectomy had been performed twenty-five years previously. He complained chiefly of pain in the right lower quadrant of the abdomen. The distress associated with much bloating and belching had been constantly present for 5 months. For the last month the pain had been colicky and severe and the gaseous distention had been more pronounced. During the past three months he had lost 11 pounds in weight.

Physical examination revealed no abnormality



except a palpable and tender mass in the right lower quadrant just beneath the previous appendectomy scar. On close observation this mass seemed to momentarily increase in size and become extremely painful. His pulse was 78; temperature 100.6°; blood pressure, systolic 110, diastolic 78. Urinalysis was normal. A blood count showed the hemoglobin to be 73 per cent with 4,330,000 erythrocytes and 7,100 leucocytes. The blood Wassermann was negative.

On September 7, 1925, we operated, making a right rectus incision just to the inner side of the former appendiceal incision, which revealed a thick cecum with a good deal of retroperitoneal infiltration, which apparently composed the mass we had been previously able to palpate. The mass was dissected out and the cecum opened revealing a polyp about 3 cm. in diameter, springing from the region of the base of the appendix. That portion of the cecal wall from which the polyp arose was excised and the opening closed. On examination of the tissue, the pathologists reported an adenocarcinoma, Grade 2 (according to the method of Broders). The patient made an uneventful immediate convalescence. Ten months later he returned to the clinic for a check-up of his condition and neither the *x*-ray or palpation revealed any evidence of a local recurrence, although there was a soft enlarged gland in the left supraclavicular area, and we advised observation at frequent intervals.

Comment: Polypi may occur at any location within the gastro-intestinal tract. They appear as cauliflower like growths projecting into the lumen of the gut, coarsely or finely lobulated, reddish or purplish in color, often ulcerated and covered with an inflammatory exudate. There may be a single polyp or multiple lesions scattered over a large area or at other times localized in a small segment of gut. Polyposis of the entire mucosa from cardia to anus has been observed by Hauser and Kaufman but their occurrence in the small intestine is comparatively infrequent. They are usually located in the large gut, most often in the rectum and sigmoid. They are not frequently found in the cecum. In a series of 119 benign growths of the entire intestinal tract collected by Gant, only 3 were located in this region. When growing in the cecum, they usually arise from the region of the ileocecal valve.

Congenital malformation of the intestinal wall which extends into the mucosa and submucosa has been offered as an explanation for their occurrence. Some believe it to be a familial disease. Ulcerative colitis is thought to bear a definite relationship to intestinal polyposis but as yet its origin has not been definitely determined.

There has been a striking tendency toward the development of malignancy in intestinal polyps. In a series of cases studied by Struthers, malignancy occurred in 32.22 per cent. Carcinomatous polypi in the small intestine are rare, the majority being found in the colon. Malignant changes occurring in solitary polyps are more often found in the rectum and sigmoid. In a review of the literature no mention could be found of malignant changes in polyps found in the cecum.

The symptoms resulting from intestinal polyps depend upon the extent and location of the involvement and the degree of obstruction that is pro-

duced. Constipation alternating with diarrhea and the passage of mucus and blood is not an infrequent occurrence. More or less vague abdominal discomfort may be present, associated with borborygmus and visible peristalsis. Digital and proctoscopic examination determine with certainty the existence of polyps within the rectum and sigmoid. Where the growth is higher up in the tract, an *x*-ray examination with a barium enema will aid in establishing a diagnosis. Very rarely do the polyps reach sufficient size to be palpated through the abdominal wall. Weight loss and the existence of a marked secondary anemia are most suggestive clinically of malignant changes.

Polyps situated low down in the rectum can be excised or cauterized without difficulty through the anus. When in the upper part of the rectum and growing from its posterior wall, an incision over the coccyx affords the best means of removal. While partial colectomy carries with it a grave risk, it likewise affords the only means of getting rid of extreme polyposis. The justification for such a procedure must be determined by the severity of the symptoms or the coexistence of malignancy. Single polyps situated in the colon or cecum are best removed by excising that portion of the wall of the gut from which the polyp arises. Single polyps that have undergone carcinomatous changes are usually of a low grade of malignancy, are late in metastasizing, and can be safely removed by such a comparatively simple procedure.

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#### DISCUSSION

DR. A. SCHWYZER (St. Paul): The first case Dr. Judd reported, where he removed a part of the wall of the colon only, might be surprising to a good many; but malignancy of the large gut above the rectum is of such mild and slow-growing character that I think this was the motive for the doctor's procedure. In looking up my notes on carcinoma of the colon from the ileocecal valve to the sigmoid (inclusive) I was very agreeably surprised how many of these patients, comparatively speaking, have stayed well for long years. One case had taken massage of her colon for constipation for six months previous to the operation and was operated on, therefore, after the tumor had advanced quite far. This lady had lost very much blood, the hemoglobin was reduced to 23 per cent. We transfused her and, leaving her on the operating table, resected immediately as we feared she would otherwise lose what blood we had given her. The operation was over ten years ago and the woman is well to-day. Another case died recently of a heart condition (I am told) fourteen years after resection of the transverse colon for carcinoma. There had been no signs of recurrence. Only in one case did we have a short-lived improvement (nine months), and that was a case of carcinoma of the transverse colon where we had to go to the root of the mesocolon,

because the lymphatics were involved and had formed bulky masses down to the pancreas. I use, and always have used, an end-to-end suture. Up to the right end of the transverse colon we always made an ileocolic resection. The union in these cases was always end-to-end. The ileum is really invaginated by the suture into the colon for about an inch.

About three weeks ago I operated on a case of carcinoma of the stomach which had grown into the colon. We removed a little less than half of the stomach with the corresponding portion of the colon. I was quite careful not to interfere much with the circulation of the colon. I always remembered that Kocher had several cases where sloughing of the colon occurred in operations for carcinoma of the stomach where the growth had advanced into the mesocolon. In later days he, therefore, removed the adjoining portion of the colon to avoid this sloughing, and reports three cases where he did this and had no sloughing. The operation for our patient was on a Monday, and the temperature remained normal till Saturday, when it reached 100.° Friday morning he declared he felt fine. Saturday morning the pulse reached 100, while it had been in the sixties and seventies all the time before. Saturday evening the patient was dead. We made an autopsy. There was no trouble with the stomach sutures; not even a trace of fibrin was to be seen. The colon for about 2.5 inches from the suture line to the left was gangrenous, while from the right side up to the very suture line it was living. We had resected the mesocolon flush with the colon. There was no part of the colon at the suture line which was denuded of its mesocolon, nor had we resected the mesocolon to any depth; in fact we had kept quite close to the gut. Nevertheless gangrene had set it on the left side of the suture line. From the appearance of the parts the perforation must have occurred probably Saturday morning. The neighboring peritoneum had had no time to throw out fibrin.

I then looked up the anomalies of the colon circulation. Testut, the French work on anatomy, and especially "Henle's Anatomy," gave interesting information which could explain our case. Among the varieties of arterial supply of the colon I found two which interest us here. First, there occur cases where the right colic artery (or the middle colic artery if it exists) and the left colic do not anastomose macroscopically, while, as you know, there is normally an arterial arch between the right respectively, the middle colic artery, and the left colic, the former originating from the superior mesenteric, and the latter from the inferior. In the cases where there exists no such arterial anastomosis the greater portion of the transverse colon is supplied by the superior mesenteric artery and the resection being made in the right area of the transverse colon the left segment will have no circulation except what little capillary communication the left colic can furnish. This is apparently at times insufficient, especially in the presence of a suture line much exposed to infection. Kocher thought that it was infection which brought on the gangrene; but the fact that in our case the right side was not affected excludes this cause as the deciding one, though it may assist in causing sloughing.

There is a still more dangerous anomaly in some cases. There may be no inferior mesenteric artery at all. The superior through its median colic branch then supplies the blood for the descending colon and furnishes even the superior hemorrhoidal artery. Imagine the drama following an extensive resection of the transverse mesocolon under these conditions.

Even if the omentum is broadly grown to the colon up to the suture line, this furnishes not in the least a sufficient blood supply; in fact there exists only a moderate capillary connection.

But our case teaches us that even if the mesocolon is cut flush with the colon and the resection of the mesocolon is even quite shallow, there may nevertheless be sloughing on the left side if the direct arterial supply was deficient.

CARL B. DRAKE, M.D.

Secretary

## BOOK NOTICES

EXAMINATION OF CHILDREN BY CLINICAL AND LABORATORY METHODS. By Abraham Levinson, B.S., M.D. Second edition with eighty-five illustrations. St. Louis: C. V. Mosby Company, 1927.

This is a very practical treatise on clinical and laboratory methods in the study of infants and children. Simple laboratory tests of practical value and their interpretation are discussed. The style is clear and concise, and the directions are very explicit. It is an excellent book for the medical student and the general practitioner.

—DAVID M. SIPERSTEIN, M.D.

MANAGEMENT OF THE SICK INFANT. By Langley Porter, B.S., M.R.C.S. (Eng.) L.R.C.P. (London) and William E. Carter, M.D. Third revised edition Illustrated. St. Louis: C. V. Mosby Company, 1927. Price, \$8.50.

This is the third edition of this very popular and valuable book on the practical phases of the management of the sick infant or child. It contains a minimum of theory and a maximum of valuable practical instruction. The section dealing with methods is as usual the most valuable portion of the volume. The directions are concise and explicit and can be followed very easily. Several of the newer methods of treatment have been incorporated, but the book as a whole does not differ materially from the other editions.

—DAVID M. SIPERSTEIN, M.D.

PRINCIPLES AND PRACTICE OF CHEMOTHERAPY, with Special Reference to the Specific and General Treatment of Syphilis. By John A. Kolmer, M.D., Professor of Pathology and Bacteriology in the Graduate School of Medicine, University of Pennsylvania. 1,106 pages with 82 illustrations. Philadelphia and London: W. B. Saunders Company, 1926. Cloth, \$12.00 net.

A treatise on the chemistry and therapeutic action of the various compounds used in the treatment of syphilis. The author is an international authority on the subject, and, needless to say, the book is up to the expectations from such an author. The references are numerous; the text is clear and concise, and can be used as a text, as well as a reference. It is highly recommended to anyone interested in syphilis. —H. E. MICHELSON, M.D.



# THE JOURNAL-LANCET

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## PSYCHOLOGY VERSUS SPANKING

A very bold man has recently been quoted in the press, and he hails from Minneapolis. His name is Cedric M. Lindholm. He has spent four years in investigating adult probation cases in the Twin Cities, and he recently outlined before the National Probation Association Convention in Des Moines the startling statements that "inhibitional failures" are filling the penal institutions of the country; that "older sisters are depriving their lone brothers of a gambler's chance for success in life," and that "old-maid aunts are sending more nephews to correctional institutions than have dime novels."

Mr. Lindholm finds, too, that children who have not been trained in restraint and respect for discipline before their sixth or seventh years are more susceptible to error in later life; that the doting parents or other relatives are important factors in such cases. And he thinks, as has been said before, that an "inhibitional failure" is imminent; that each time a nurse or parent picks up a whimpering infant from its crib and quiets it by walking the floor a common method of spoiling a youngster has begun, and it is followed up by the pampering of doting papas and mammas, aunts and elder sisters. Consequently, a lone boy or a lone girl in a family has the least chance of evading such influences.

We are very much inclined to agree with this sentiment. Doubtless, every other physician has seen spoiled children, spoiled by their parents and by their relatives and friends, and all of it wholly unnecessary. We further believe that when youngsters are spoiled or are destined to be spoiled, someone ought to exercise a restraining hand, otherwise known as a spanking hand. A good sound, sensible spanking, carried out for a definite effect and with an explanation as to why it is done, has restrained many a youngster from becoming spoiled and from making an ass of himself. Even babies can be spanked with some degree of regularity,—not brutally, but just reminded that they are due to observe certain rules and regulations in conduct. We frequently see examples of non-restraint or the non-spanking mother who finds after a very short time, within a few weeks or a few months, that she is dominated and ruled by the child.

Of course, all this is rank heresy to the psychologist. He would much rather go into a family and straighten it out by psychological explanations, but whether his method ever really gets anywhere is a question. Sometimes, of course, it must; no good sensible method can fail. But we should sometimes put our psychology in the closet and administer a sound reprimand or inflict punishment, if necessary, rather than let the chance of spoiling the child go on.

The editor has gotten into trouble once or twice on this question before, so he will not be at all surprised if someone takes vigorous exception to his remarks. He has a few painful sensory recollections himself. Whether it did any good or not is for his friends to decide. However, he recalls that a part of the punishment consisted in the fact that he was disciplined or, plainly speaking, spanked in front of some of his choice boy friends, and the humiliation was almost as penetrating as the father's hand.

## UNIVERSITY EDUCATION

One hesitates to broach some subjects, and the writer finds himself timid in attempting to write again on this topic, for he has written at other times on educational matters. However, we notice in an important press, *Vanity Fair*, a comment on the university situation of to-day in which it was suggested that more than nine-tenths of the university schools are for higher vocational training and less than one-tenth institutions of learning. This hardly seems pos-

sible, but probably the idea has been forming in someone's brain and he has finally let it out—whether it is true or not. At all events, it seems reasonable to suppose that there should be more of the intellectual study made possible in what *Vanity Fair* calls a "department of standardized and vulgarized education." Have we not yet learned in America that, in spite of the effort to standardize things, there ought to be enough free companions interested in the good things of the mind, brilliant, learned, and wise, to offset the standardized idea?

In looking over some of these courses the whole situation reminds one of a department store in which you get every source of information that you may inquire about at the desk instead of getting something that is worth while for the individual, whereby he may be trained to think over broad areas rather than in narrow fields. Information and education are two different things. The well-informed man may know everything in the "World Almanac," yet be a boor, a vulgarian, an uncivilized yahoo; whereas the truly educated man may have no practical information whatever, but may have some of the best thoughts in his mind, which he has somehow acquired. One could almost get a good education by reading these new-fashioned books that have sprung into prominence like "Ask Me Another," or other books of the type. They certainly carry an enormous amount of information and, in a way, may be a part of the education of the individual. It requires the use of the memory and the recollection of facts.

The writer in *Vanity Fair* goes still further and thinks that "what we need in America to produce a true, intellectual golden age is something approximating the system in use at All Souls' College, Oxford, by which the outward and visible forms of cultivated living would be so provided that a group of distinguished minds might live in a continual state of grace." How this is to be brought about in this comparatively new country is debatable. When a new man develops along his own educational way and achieves fame he is immediately subsidized by another and a bigger and better university. He, of course, has a further chance to enlarge his viewpoints and to progress. The average man, however, gets into a rut and he goes pegging along, repeating the same old things from year to year until he becomes like the old man in Willa Cathers' "The Professor's House," brilliant in a way, but narrow. He does not care to go beyond his own created confines. And he

looks upon education as a matter for the few and not a necessity for the many. Again comes the question as to who are those fit to be educated? Have they the primary brain stamina that will carry them along and fit them for an occupation? And should they not, if they are of limited possibilities, be trained in something useful in life, whether it is for labor, as a helper in more modern things, or trained as an advanced thinker who some day will startle the world by his brilliance and yet has not been what we choose to call an educated man? He really is educated if he has that sort of fiber in him, and has the tenacity and purpose to advance and can suddenly see with a clear vision something ahead of him which he is bound to attain. This applies as well to medicine as to any other department in a university. Some day there will be a census taken, and if our faddists are interested in intelligence tests to keep up their work, they may be able to segregate the really educated classes from those who have suddenly stopped and are incapable of going farther.

#### AN IMPORTANT LEGISLATIVE APPROPRIATION

During the last session of the Minnesota Legislature a seemingly unimportant or, at least, a little-noticed, appropriation was made, and it was evidently fostered by Dr. William J. Mayo, who, as we all know, is a member of the Board of Regents of the University of Minnesota. He had evidently been in close touch with the medical authorities at the University and had suggested that an appropriation of twenty-five thousand dollars a year be granted to the Medical School for research work. It took a good while to get it over, but it went through without any objections. It came up in the final bill which was submitted to the Governor, and in spite of the fact that he was accused of, and abused for, lopping off appropriations, he left this important appropriation on because he was convinced that he was doing the University Medical School a great service, and no one can dispute that. It will give some of the men in the laboratories and in the clinical departments an opportunity to work out a good many of their problems.

No higher mark of esteem could be attributed to the Governor and to Dr. Mayo for this departure from the usual mode of doing things. It must be a great joy to the teaching force of the University Medical School to expand their work and to develop new methods of working



and to make this explanation or extension of medical theories which have long been accepted, but not definitely proved. This does not apply to any one department in the University, but covers all of the medical and surgical work.

## MISCELLANY

### IN MEMORIAM

#### DR. HUBERT A. PINAULT

Dr. Hubert A. Pinault, of St. Joseph, Minn., died on May 21, 1927, at the age of 72, from apoplexy. Dr. Pinault was born in Rimouski, Quebec, Canada, and was a graduate of the Laval University of Canada, in 1883. Dr. Pinault had engaged in active practice for forty-two years, thirty-eight of which were spent in St. Joseph, Minnesota. He was coroner for thirty years in Stearns County, resigning on January 1, 1927.

Dr. Pinault enjoyed a large practice and was actively engaged in the practice of medicine until two days before his death. Dr. Pinault was an honorary member of the Stearns-Benton County Medical Society; consulting staff member of St. Raphael's Hospital, St. Cloud, and advisory physician to St. John's University, Collegeville, Minnesota.

He leaves to mourn him his wife, two sons, three daughters, and many grand-children.

P. E. STANGEL, M.D.,  
Secretary, Stearns-Benton County  
Medical Society.

#### DR. THOMAS H. PLEASANTS

At a special meeting of the Fergus County (Montana) Medical Society, held Tuesday evening, resolutions on the death of Dr. Pleasants were adopted as follows:

WHEREAS, our esteemed colleague, Dr. Thomas H. Pleasants, has been called from his labors;

*Be it resolved*, by the members of the Fergus County Medical Society that in the death of Dr. Pleasants the medical profession has been deprived of a highly honored member, whose professional integrity and courteous demeanor has long endeared him to his brother physicians, and,

*Be it further resolved*, that these resolutions be spread upon the records of the Society and that a copy thereof be sent with our condolences to the bereaved family.

## NEWS ITEMS

Dr. J. U. Joffrion has moved from Bovey to Biwabik.

The American Medical Association will hold its 1928 annual session in Minneapolis.

Dr. Maria Matias, of Manila, P. I., was a visitor at the Mayo Clinic last month.

Dr. John H. Garberson, of Miles City, Mont., is going to Europe to visit the leading surgical clinics.

Dr. Z. N. Korth, of the Mayo Clinic, was married on May 18 to Miss Agnes Morton, of Omaha, Neb.

Beginning in September all students of the University of Minnesota will be given free medical examinations.

Dr. C. W. Wilder, of Lewiston, Mont., has been appointed health officer of that city to succeed Dr. Pleasants, deceased.

Dr. C. T. Schroyer, of Sioux Falls, S. D., is erecting a clinic building of brick and concrete construction, and two stories high.

Dr. W. J. Longstreth, of the U. S. Veterans' Bureau at Sioux Falls, S. D., has been transferred to the Bureau at Kansas City, Mo.

Dr. G. Elmer Strout, of Minneapolis, has joined the Nicollet Clinic and has moved from the Donaldson Bldg., to 1009 Nicollet Ave.

Drs. W. J. Mayo and D. M. Berkman, of the Mayo Clinic, accompanied by their wives, have gone to Europe for a six weeks' visit to England.

At the May meeting of the Huron (S. D.) Medical Society papers were presented by Drs. L. N. Grosvenor and J. C. Shirley, both of Huron.

The Grand Forks medical men are looking for the largest attendance in the history of the State Association at the annual meeting now in session in that city.

The two hospitals in Conrad, Mont., merged last month, and they are now known as the Conrad General Hospital, which is a public hospital of 25-bed capacity.

The Miles City (Mont.) Clinic has moved into its handsome new clinic building, which also furnishes offices for other physicians who are not members of the Clinic.

Dr. Arthur H. Borgerson, a graduate of Northwestern, who took his internship work at Ancker Hospital, St. Paul, will begin practice next month at Long Prairie.

Dr. A. G. Anderson, of Minneapolis, accompanied by his wife, left last week for Europe to visit the clinics of Edinburg, Paris, Berne, and Vienna. He will return in August.

It is announced by the U. S. Veterans' Bureau that everyone of the fifty-two hospitals maintained by the Bureau has been approved by the American College of Surgeons.

Dr. M. C. Sorenson has moved from Blunt, S. D., to Huron, S. D. Dr. Sorenson formerly practiced at Sioux Falls for fifteen years and has practiced at Blunt for eight years.

Dr. J. C. Litzenberg, of Minneapolis, was elected chairman of the Section of Obstetrics, Gynecology, and Abdominal Surgery of the American Medical Association for next year.

Dr. P. J. Weyrens, of Sheldon, N. D., who recently purchased the practice of Dr. C. J. Goodheart, of Akeley, Minn., is a graduate of the Medical School of the U. of M., class of '00.

Dr. L. A. Schipfer, of Bismarck, N. D., who has been taking a post-graduate course in Vienna and Paris has returned and is finishing his post-graduate work in Chicago. He expects to be home in Bismarck by August 1st.

Dr. J. L. Tiber, of St. Paul, has returned from Europe, where he spent the past year working in the Vienna clinics. During part of the year he acted as president of the Vienna Association of American Medical Men.

The corner-stone of the new building for St. Andrews Hospital at 712 Fifth Street, S. E., Minneapolis, was laid last month. This part of the new building will cost over \$200,000 and will have a capacity of sixty beds.

Dr. W. F. Cogswell, President of the State Board of Health of Montana, attended a number of meetings in Washington, D. C., last month, by permission of the State Board with the expenses of the trip paid by the Board.

Dr. A. A. McLaurin, of Pierre, S. D., has recently returned from a year of post-graduate work in x-ray at Harvard University. His work was principally under Dr. Sosman, Dr. Mac-Millan, and Dr. Holmes of the Harvard staff.

Dr. E. P. Quain, of Bismarck, N. D., has gone to Europe to spend a couple of months in the hospitals and clinics. He is a delegate to the Rotary International Convention at Ostend, Belgium. Dr. Quain is accompanied by his son, Buell.

Dr. Herbert E. Chamberlain, of New York City, has been appointed successor to Dr. Smiley Blanton, Director of the Child Guidance Clinic of the Minneapolis schools. Dr. Blanton goes to Vassar College as a member of the Vassar faculty.

Dr. Thomas H. Pleasants, of Lewiston, Mont., died last month at the age of 70. Dr. Pleasants was a graduate of the Medical College of Virginia, class of '77, and began practice in Mon-

tana in 1889. He was health officer of Lewiston at the time of his death.

The graduate nurses of Ancker Hospital held a reunion last week in the People's Church at St. Paul. The first class graduated in 1894, contained four nurses, and the class of this year contained twenty-eight members. The hospital has graduated in thirty-five years 614 nurses.

Only two North Dakota men appear upon the program of the North Dakota State Medical Association for formal papers at the annual session, which opens to-day. These men are Dr. R. E. Pray, of Valley City; and Dr. H. E. French, Dean of the School of Medicine, University.

The leading dentists of Minnesota paid very high tribute to Dr. Alfred Owre, Dean of the Dental School of the University of Minnesota, in a farewell banquet tendered him last week on his departure for New York, where he goes to take up work at Columbia. He has done a great work in Minnesota, and his loss to the State University is well-nigh irreparable.

The Northwestern District Medical Society of North Dakota has a membership of 54, and at its April meeting it passed a resolution that no action should be taken against a member at any meeting unless at least twelve members were present. Three new members were admitted at the last meeting, and case-reports were presented by Drs. Cameron, Nestos, McCannel, and Sorenson.

At the annual meeting of the Brown County Medical Society, held last month at New Ulm, papers were presented by Dr. Stanley Maxeiner, of Minneapolis, and Dr. C. A. Wagner, of the Mayo Clinic. After dinner, officers were elected as follows: President, Dr. A. F. Strickler, Sleepy Eye; vice-president, Dr. G. B. Weiser, New Ulm; secretary-treasurer, Dr. W. A. Mierding, New Ulm.

Dr. Goldie E. Zimmerman, of Sioux Falls, S. D., soon leaves for a trip on the Continent. She plans to take in England (London), Scotland, Ireland (Dublin), Berlin, and Vienna, and will be gone for six or seven months. This will not be her first trip in Europe for she was in France during the World War, twenty miles out of Paris, and in charge of the children of the refugees in France.

When South Dakota changed governors, at its last election, electing a democrat to replace a republican, the new democratic governor asked the Superintendent of the State Board of Health,



Dr. J. F. D. Cook, to resign. Dr. Cook replied that loyalty to the men who had secured his nomination prevented such action on his part. The governor then removed Dr. Cook and appointed Dr. Park G. Jenkins, of Mobridge, who had served twelve years in that capacity. Dr. Cook is still secretary of the South Dakota State Medical Association.

#### The South Dakota Health Officers Association

The Association met at Huron on May 3, 1927, at the Marvin Hughitt Hotel, at 2:00 p. m., and presented the following program:

Present Status of Whooping Cough—D. R. Jones, M.D., Epidemiologist State Board of Health and Assistant Collaborating Epidemiologist, U.S.P.H.S. Tourist Camps—Carl F. Meyer, B.S., Sanitary Engineer, State Board of Health and Assistant Collaborating Engineer, U.S.P.H.S.

Rural Versus Urban Health—P. W. Covington, M.D., International Health Board Rockefeller Foundation, Salt Lake City, Utah.

Relation of State and Local Health Authorities to the Prevention of Trachoma—P. D. Mossman, M.D., Surgeon, U.S.P.H.S., Rolla, Missouri.

Presiding—J. F. D. Cook, M.D., Superintendent State Board of Health and Collaborating Epidemiologist, U.S.P.H.S.

The meeting was well attended. Over fifty county health officers were in attendance.

Beside the regular program the meeting was open for general discussion of such subjects as the men wished to discuss.

Election of officers followed, and resulted as follows: President, C. W. Hargens, M.D., Supt. County Board of Health, Fall River Co., Hot Springs, S. D.; secretary, J. F. D. Cook, M.D., Langford, S. D.

Place of next meeting, Hot Springs, May, 1928, on the day preceding the meeting of the State Medical Association.

J. F. D. Cook, M.D.  
Secretary

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#### PHYSICIANS LICENSED AT APRIL (1927) EXAMINATION TO PRACTICE IN MINNESOTA

Name	School and Date of Graduation	Address
BY EXAMINATION		
Bates, Murray Burke.....	U. of Minn., M.B., 1927.....	3101 11th Ave. So., Minneapolis
Chesley, Albert Justus.....	U. of Minn., M.D., 1907.....	91 Arthur Ave., Minneapolis
Chunn, Stanley Sylvester.....	U. of Minn., M.B., 1927.....	316 Ontario St. S. E., Minneapolis.
Corry, Lawrence FitzGerald.....	St. Louis Univ., M.D., 1926.....	N. P. B. A. Hospital, St. Paul
Cranston, Robert Weatherston.....	U. of Minn., M.B., 1927.....	1817 Knox Ave. So., Minneapolis
Dean, Benj. Franklin, Jr.....	Geo. Wash. Univ., M.D., 1923.....	College Apt., Rochester
Erickson, Reuben Ferdinand.....	U. of Minn., M.B., 1926.....	3105 Chicago Ave., Minneapolis
Fallon, John Michael.....	Harvard, M.D., 1923.....	Mayo Clinic, Rochester
Fredricks, Leonard Henry.....	U. of Minn., M.B., 1927.....	2306 31st Ave. So., Minneapolis

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## PHYSICIAN LICENSED—Continued

Giere, Joseph Christian.....	U. of Minn., M.B., 1926.....	University Hospital, Minneapolis
Gustafson, Harold Theodore.....	U. of Minn., M.B., 1926.....	2520 Brighton Ave. N. E., Minneapolis
Holloway, Jackson Kenneth.....	U. of Pa., M.D., 1920.....	Mayo Clinic, Rochester
Houkom, Bjarne.....	U. of Minn., M.D., 1927.....	University Hospital, Minneapolis
Husband, Myron Williams.....	U. of Minn., M.B., 1927.....	304 Harvard St. S. E., Minneapolis
Malmstrom, John Arnold.....	U. of Minn., M.B., 1927.....	Box 73, Orr, Minn.
Maloney, Frank George Hiram.....	Toronto, M.B., 1924.....	Mayo Clinic, Rochester
Mercil, Wm. Francis.....	U. of Minn., M.B., 1927.....	St. Mary's Hospital, Duluth
Moe, Russell James.....	U. of Minn., M.B., 1927.....	3625 Pleasant Ave., Minneapolis
Moga, John A.....	U. of Minn., M.B., 1927.....	271 Charles St., St. Paul
Murray, James Kenneth Parry.....	Toronto, M.B., 1921.....	319 5th Ave. S. W., Rochester
Norberg, Carl Einar.....	U. of Minn., M.B., 1927.....	St. Luke's Hospital, Duluth
Palmer, Harold Dean.....	U. of Minn., M.B., 1927.....	1874 Portland Ave., St. Paul
Palmer, Bean Mark.....	Med. Col., So. Car., M.D., 1925.....	Mayo Clinic, Rochester
Passalacqua, Luis Antonio.....	Geo. Wash. Univ., M.D., 1925.....	Mayo Clinic, Rochester
Peterson, Joel Luther Emanuel.....	U. of Minn., M.B., 1927.....	714 Delaware St. S. E., Minneapolis
Ringle, Otto Frantz.....	U. of Minn., M.B., 1927.....	500 E. 15th St., Minneapolis
Schaefer, Wesley George.....	U. of Iowa, M.D., 1926.....	St. Barnabas Hospital, Minneapolis
Schuetz, Clarence Eugene.....	U. of Minn., M.B., 1927.....	429 Union St. S. E., Minneapolis
Stenstrom, Annette Treble.....	U. of Buffalo, M.D., 1924.....	501 Walnut St. S. E., Minneapolis
Thorson, Orin Pernel.....	U. of Minn., M.B., 1927.....	329 Union St. S. E., Minneapolis
Williams, Lowell Eugene.....	U. of Minn., M.D., 1927.....	510 Essex St. S. E., Minneapolis

## BY RECIPROCITY

Bassel, Paul Maiden.....	U. of Texas, M.D., 1924.....	428 6th St. S. W., Rochester
Crane, Jacob Frederick.....	Emory, Ga., M.D., 1922.....	P. O. Box 373, Rochester
Crisp, Norman William.....	U. of Vermont, M.D., 1925.....	518 5th Ave. S. W., Rochester
Dally, Harry Homer.....	Rush, M.D., 1902.....	Amboy, Minn.
Gayden, Lewis Ruben.....	Vanderbilt, M.D., 1925.....	904 W. Center, Rochester
Meinert, Albert Erwin.....	Wash. Univ., Mo., M.D., 1924.....	Galesville, Wis.
Peterson, Joel Asbury.....	U. of Colorado, M.D., 1925.....	Mayo Clinic, Rochester
Pope, Charles Evans.....	Northwestern, M.D., 1924.....	Mayo Clinic, Rochester
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Vickery, Eugene Benton.....	Johns Hopkins, M.D., 1923.....	Mayo Clinic, Rochester

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## FRACTURES\*

BY KELLOGG SPEED, B.Sc., M.D., F.A.C.S.

CHICAGO, ILLINOIS

I am sorry to drag your minds down from consideration of blood-vessel surgery, as presented by Dr. McNealy, to such a mean and lowly thing as broken bones. But I want to talk to you this morning about two types of fractures which are a little different from the ordinary run of fracture cases. While they are small they are rather important because they lead to great disability.

### FRACTURE OF HEAD OF RADIUS

CASE 1.—Fractures of the head of the radius are rather common and frequently are not identified. And when I say they are not identified, I mean that even in the face of a skiagram one is liable not to make a diagnosis.

I present to you the patient in this case, and here are the three plates. In the anteroposterior view we will see a fragment which has been broken off the head of the radius and is lying displaced upward against the external condyle of the humerus. In the lateral view we will see the scattered fragments of the head, two or three in number, and again in the third plate.

These fractures are nearly all received by falls directly on the hand, not the mechanism of a Colles' fracture,—not a fall on the outstretched hand,—but a fall straight down, thus, on the hand in such manner that the force is transmitted through the carpus, directly through the radius,

the ulna not entering into the mechanism at all, the force being extended through the external condyle of the humerus and the radial head suffers fracture.

Such a violence was received by this man. In adults the head is rather easily broken. In children the fractures are mostly across the neck, they are not of the head, but in adults it is usually the head that is injured.

Now, these are apparently very small affairs, they are "little" fractures. They involve merely the head of the radius, but their significance is rather important and far-reaching. The specimen in this man's case is not available this morning, but here is a specimen removed from a woman, one of many specimens that I have removed from other patients. We can see that the three main fragments make up the rounded portion of the head. The head of the radius is perfectly round, and when we break off one fragment or hit the head and spoil its rounded contour we are going to interfere with its purpose, because the action of the radial head is that of rotation within the lesser sigmoid notch of the ulna. That permits pronation and supination of the forearm. But if the rounded wheel which permits this motion is broken or has a piece taken out of its circumference, it then becomes a flat wheel, and the action of pronation and supination will no longer normally take place. And so our patient falls on his hand, directly down thus, and following the accident he has some pain in

\*Presented before the Seventeenth Annual Meeting of the Minneapolis, St. Paul & Sault Ste. Marie Railway Surgical Association, at Chicago, Illinois.

his elbow, he may have some swelling, ecchymosis may be manifested in five or six days, and he does have a certain pathognomonic symptom: He can extend and flex his forearm almost as well as he ever could, but he cannot supinate or pronate it. The attempt to supinate or pronate the forearm causes such pain that he is unable to do it. Now, that sign alone is sufficient to make a diagnosis of the injury. When an individual sustains a fall and cannot pronate and supinate his hand, although he may be able to flex and extend the forearm, that should at once make us suspicious. The palpable bony points of the elbow are normal, there is nothing there, but we are liable to find on pressure over the head plus rotation of the forearm that there is a point here of extreme tenderness, and of course in some cases, not all, there is crepitus, but crepitus is a very unreliable thing to tie ourselves to in the making of a positive diagnosis.

The effect of the injury is, as stated, far-reaching. First of all, pronation and supination are interfered with. A detached fragment may be displaced anywhere in the joint and mechanically interfere with flexion and extension. In that event the patient loses not only pronation and supination, but later considerable flexion and extension, and after a while the movements of the joint become greatly restricted and eventually his elbow-joint is ankylosed. I have had one patient who suffered this fracture 30 years ago and now has a completely ankylosed elbow. Progressive changes in the arm go on so steadily that bony ankylosis is the result. We have only to look at the elbow to recall some of the points I have given. The radius rotates around the ulna, and if we take out a piece of this wheel, motion ceases. If a piece of bone is broken off here and lodges in the joint, it acts as a mechanical block to flexion and extension.

*Treatment.*—The treatment for fracture of the head of the radius in the adult is operation. There is no other treatment. I do not know whether you believe that or not, but it is true. Dr. John Ridlon, of Chicago, is violently opposed to most operations on bones, almost as violently opposed as I am, and yet he is in accord with the idea that operation is necessary in these cases. We cannot get any functional return if we leave that fractured head in, the unhappy condition will progressively increase, and the result will be a stiff elbow, and certainly a great loss of function will occur. The longer the case goes untreated the worse it is. So the quicker we take the head out, the better. The operation is intra-articular.

This patient was operated on last Saturday,

three days ago. When he came in the fracture was three or four days old. (By turning the hand in, patient moves the arm slightly.) He has a little motion. (Patient brings hand up to face.) Remember, it is only three days since operation. After the stitches are removed we will start vigorous massage, and in four weeks the man should have a practically normal return of function.

In children we never take out the head of the radius unless there is absolute blocking of the joint by a piece of bone. Children accommodate themselves very nicely to changes in the joint which has not yet reached maturity, and there is room for adaptive changes.

#### CARPAL FRACTURE

The other cases that I have to show are carpal fractures. I am taking the insignificant work this morning and making a mountain out of a mole-hill.

*CASE 2.—Dislocation of lunate bone and fracture of triquetrum.*—This patient has a painful wrist, but there is no pain on the dorsal side. He has some swelling on the palmar side at the median line of the wrist, also pain on motion on the ulnar side of the carpus.

*Operation.*—In this particular case there is a certain condition in which we always make an incision on the palmar side. After cutting through the skin I come down at once to the tendon of the palmaris longus, go on through and down below that. Extending near the palm, I come to some of the transverse layers of the annular ligament of the carpus, and I am now cutting its fibers. I then pass through some fascia to the muscle bellies of the adductors of the thumb, and in retracting the annular ligament I come upon this most important structure in the wrist, the median nerve, which I wish to avoid injuring. The median nerve is lying at the bottom of my field, so I will isolate it, separating it from its surrounding attachments. And, if we are not familiar with this nerve, we will be surprised to see how large it is. It is a very good-sized nerve at this level, the biggest thing I have come to in going into this wrist. I must next retract the median, and that has to be done very carefully, with delicate steady traction with the proper retractors which I use for the head of the radius and which I use for these cases. I then come down to the flexor tendons in the wrist, and, without injuring them, they are delicately held back out of the way. We retract the first tendon, then pick up the other flexor tendons thus, when my associate will make steady



traction so that I can find my landmarks.

In passing down between these tendons and past the median nerve I come to the carpus, and projecting up here is a white body. There is edema and bloody effusion in this carpal joint. We dislike to go in from the flexor side of the wrist as we are doing in this case, because it means passing through these various layers of tissues. But in this particular lesion, which we are going to diagnose in a moment, it is the best way to go. This bone now comes into view very readily, and it is attached to the radius by its ligaments which I must now sever. The ligaments between the cavity from which it has been dislocated and the lunare have been torn. Relatively speaking, the bone is free at the distal end, but not at the proximal end. Here we come upon our lunare, which was dislocated, as you are going to tell me in a moment. A piece of the triquetrum is attached to it, and it now becomes my duty to remove the rest of the triquetrum because we never leave in the carpus any fragments of broken bone.

You probably wonder why I am having so much difficulty. I always have difficulty with these cases because in operating upon them I adhere to a certain standard of technic; that is, I will not put my fingers in a wound, I will not injure structures knowingly, and I like proper knives to use. This is such a fracture as you will probably never see. In my experience I have seen but two cases of fracture of this bone. They are not so extremely uncommon perhaps, but I have had only two.

Now, just once I will put my finger in there to feel that the joint is empty of all bone fragments, and that is all. Then we will close this wrist. First I have to close the annular ligament, after which I will close the tissues by layers and no splint will be applied.

The lunate bone occupies a relatively small space next to the radius, then coming down to the distal row of carpal bones we find the capitulum adjoining the lunare and beyond that is the metacarpal. The lunate bone may be pushed out of position either way. If we fall on the extended hand, the hand is forced up, and this bone goes up until it occupies a position of maximum extension, the ligaments to the lunare may be torn, when it will drop down into the palm out of position or may remain where it is and permit the other carpal bones to be dislocated around it. This type of lesion is called perilunar dislocation of the hand. The hand may be pressed back too far and the lunare may drop down here, and in this particular case that is

exactly what happened. This ligament was torn, the lunate dropped into palmar dislocation, but in this dislocation the lunate was with only partial rotation. It might have dropped and assumed a position down here, or it might have been swung clear around and assumed a position away up here under the radius. The bone may move into any one or intermediate grades of these three positions. It also may move up here and be dislocated away up out of position on the dorsal side following falls or injury where the hand is hyperflexed. Thus the lunate bone may be shot out of position.

So far as lunare fractures alone are concerned, they are all called perilunar dislocations of the hand. We could have dorsal dislocation, we could have perilunar dislocation, and we could have any one of three degrees of each of the two main types. So there may be seven different types of dislocation of the lunate bone.

In the wrist the important bones are those located in the proximal row. Any one of these bones may be fractured, the condition goes undiagnosed, and consequently is not operated on, as, for instance, in the case of the navicular bone.

The patient just operated on had dislocation of the lunare down into the palm, and in addition had a fracture of the triquetrum bone. Why did I operate on this patient? In studying the pathology, as in the case just shown and also in fracture of the navicular bone, I have found that if the condition is not recognized and the patient is encouraged to move his wrist on the assumption that the injury is a sprain, the bone is damaged forever. Its continued presence in the carpus lead to far reaching changes which will cause stiff wrist.

*CASE 3.—Fracture of Navicular Bone.* This boy once upon a time hurt himself, he does not know when. Upon inspecting his wrist we can see very little. Possibly there was some atrophy in the forearm muscles on the right side, there certainly is by measurement a lessened diameter. He cannot extend that wrist. He has perhaps a half or third of normal flexion of the wrist. He has very slight abduction or radial flexion, and very little, if any, ulnar flexion. In the study of these conditions one should of course be familiar with the normal range of motion. This boy has very little range of motion in the carpal joint, and we may note the atrophy of the forearm muscles. He can barely take hold of my hand and make any impression on it by gripping. There is absolutely no paralysis or paresis of any of the muscles, intrinsic or otherwise, in the hand. We find also on looking at his hand and wrist and

comparing the two wrists, a perfectly classical thing. We are familiar with the classics of this condition, namely; that in the normal wrist the "anatomical snuff-box" that we remember digging out on the cadaver, is perfectly normal, and here it is, but on the injured side it is obliterated, we cannot find it at all. If I take my finger and thumb and press in the tabatiere on that injured side he feels it, if I press here he does not feel it.

There is only one other symptom of any value in these cases, and that is found by putting the hand in radial flexion as much as possible, after which we may strike the head of the third metacarpal bone. Tenderness in the region of the navicular will be felt. That symptom is not present in this case. Why? Because this is an old fracture and much of the early post-fracture and joint tenderness has now disappeared because the bone is dead. But that is a pathognomonic sign in fresh fracture.

This is a very beautiful case. Here are the skiagrams of his wrist showing the fragments. To look at that skiagram I would say the fracture was between one and two years old, and yet the patient has no remembrance of the time the injury took place. That is not surprising, because in many such cases men fall or strike their wrist and are little aware of the severity of the injury. Any disability in the wrist is considered to be a sprain, motion is advisable, no splintage is used, massage and heat are given, and the condition is not recognized. Most of us cannot recognize a carpal fracture when we see it on a plate. How many of us know the names of all the carpal bones so that we can rattle them off? Most of us know very little about their topography and their shadows as shown in *x*-ray plates. It is an interesting study to learn to identify those carpal bones in lateral and anteroposterior views. I have just finished my tenth year on the subject, and have enjoyed this study very much.

As stated in connection with the preceding case, after a few days (I set an arbitrary limit of one week) no fractured navicular will unite. If you break your navicular to-day, and I see it this afternoon and recognize it and can splint your hand for seven or eight weeks, you *may* get union in that bone. But it takes a long, long time. In children it is not quite so bad. As stated, if the condition is not recognized and the doctor says, "You have a sprained wrist, go back to work, you are all right," then the trouble begins. That trouble is not immediate, but the patient develops pain, he cannot set a brake-wheel, he cannot lift a coupling-pin connection,

there are many things he cannot do, until finally the condition becomes like that found in this boy. I think the fracture in this case is two years old. After two years, what function did he have in that wrist? He could not raise his hand at all; he could flex the wrist about half of normal, and there is a little radio-ulnar flexion. He had not enough power in that hand to turn a door-knob. Stiffness increases also over a period of several years, and I get most of these patients two to five years after the fracture. In the hospital we usually get them earlier, but in private practice five years is the rule. After the expiration of that time what has happened? The bone is not united, the process has gone on until the whole inside of the navicular has become absorbed, with only a thin shell remaining. The inside of the bone is fibrous, new bone formation has developed around the radius at the carpal end of the bone, and bony ankylosis is on the way.

So if we receive a patient with this injury while the fracture is fresh, identify it at once. Put a splint on the forearm and wrist. Do not take the arm off the splint and tell the patient to move the wrist because that will not do any good at all; but if in the case of the fresh fracture we apply a splint at once and leave the splint on for many weeks, we may get union. I have obtained union in a child, I have had one or two unions in adults, and there are several cases reported in the literature in which bony union has taken place. But most of the fractures of carpal bones are unrecognized, and so the condition goes on to death of the navicular, if that is involved, loss of bone substance, and increased disability.

*Operation.*—In this case there is no dislocation of the lunate bone. In taking out the navicular bone alone we can go in much easier, right here on the dorsal side of the wrist. Why is it easier to remove the bone from this point? Because there is no median nerve to worry me—I have no nerve of any kind to worry me except my own nerve. And there is only one set of tendons. In these patients my aim is to put no catgut down in the wound at all, I do not care to bury any catgut except in the carpal ligament.

As I pass down in my dissection I come to the extensor tendons. Here is the annular ligament, in this case the dorsal ligament, which is not so heavy as the volar ligament. We cut through this dorsal annular ligament and come directly down to the carpus, because all I have to do is to retract the extensor tendons. Having come down to the carpal joint, I will proceed to open it and attempt to find the navicular bone. Fortunately it is not always difficult to find this bone,



but frequently it is. Upon entering the joint I find a little watery fluid slightly yellowish, there is not very much of it, but I know that in these cases this fluid is very frequently present, representing the old blood extravasation at the time of the fracture mixed with synovial fluid.

Dr. Schmidt has now retracted the tissues sufficiently so that I can see the bone, and I am trying to free it from its attachments. The navicular bone is the most difficult one of the carpus to remove, for the reason that we take every precaution not to injure surrounding bones especially the capsule of the neighboring joint and the periosteum of the bone. The extensive pathology which follows damage to these bones is because of their very precarious blood supply. They have a very limited blood supply, this supply being largely received from the ligamentous attachments and also arriving via the periosteum.

The distal portion of the bone is attached by a tendon and is rather hard to get out. In this case I have only one bone to remove because the lunare is not concerned in the fracture line. In the case of the carpal bones, fracture and dislocation are so intimately bound up that they very frequently go together. One must constantly be on the lookout for combinations of fracture and dislocation. As a rule they go together, and one can easily overlook these combinations. Their name is legion. I have tabulated and classi-

fied these injuries, and there are present in the carpus about 26 different varieties or combinations of fracture and dislocation.

I will now insert my finger just once. The annular ligament is closed over the tendon sheath, and the patient in this case will be put on physiotherapy after a few days.

In carpal fractures the results obtained by operation are very much better than can be secured in any other way, and the earlier the bone is removed after the injury is recognized the quicker will functional return be brought about. I have done only about 100 cases, and, on an average, the return to practically normal has occurred early. The sooner the bone is removed after non-union is known, the better the result will be. Operation should be followed for six or seven weeks by baking, hot applications, and active motion, when the results should be good.

In studying these cases microscopically we find that the bone never will unite, it is dead and gone. Fractures of the carpal bones are extremely interesting and very important, and if I have been successful in stimulating you to look for them in your study of skiagrams I shall feel well repaid for appearing before you this morning. Those interested in a complete survey of the subject of carpal traumata are referred to my monograph on the subject.

## RECTAL ABSCESS AND FISTULA\*

By W. A. FANSLER, M.D., F.A.C.S.

Instructor in Surgery, University of Minnesota Medical School

MINNEAPOLIS, MINNESOTA

In dealing with rectal abscesses and their resultant fistulæ in one short paper it is necessary that the material presented contains only the essentials of the usual type of cases. If all the complications and many variations were taken into account the entire evening would scarcely suffice to cover the subject. A fistula is but the terminal stage of an abscess in the ano-rectal region. As in other regions the abscess is due to infection. Any pyogenic organisms may be the causative factor, but the bacillus coli, staphylococcus, streptococcus, gas bacillus, and tubercle bacillus are most frequently found. The colon and staphylococcus account for by far the greater portion of these abscesses. In tuberculous individuals the tubercle bacillus is very frequently the offender, but in my opinion it is seldom, if



Modified from Hirschman's Handbook of Diseases of the Rectum

\*Lantern-slide lecture, presented before the Rice County Medical Society at Fairbault, Minn., February 15, 1927.

ever, the cause in persons not having a tuberculous focus elsewhere in the body. Occasionally organisms may be in pure culture in one of these abscesses, but more frequently there is a mixed infection.

In almost all cases the source of these infections is from the bowel, which always contains numerous pyogenic organisms. These organisms penetrate the bowel wall from some infected area either by way of the blood stream, lymphatics, or direct extension. Occasionally there may be a penetrating wound through the bowel wall due to a fish bone or some other sharp object. Personally I have seen only two cases of this type. One was due to a fish bone and the other to a fragment of a chicken bone. Rarely some external injury may be the cause of onset. In fact the only cases which are not due to infection in the bowel wall are those due to infection of hair follicles about the anus, infected thrombotic hemorrhoids, or external violence. The site of the infected area which causes the abscess may of course be located almost anywhere in the bowel wall and the location is an important factor in the situation of the abscess. The majority of abscesses are due to an infection existing in a crypt of Morgagni. These little pockets having a pouch-like ending are ideal collectors of hard pieces of stool, seeds, or other foreign particles. Organisms always being present, this mechanical irritation quickly develops an area of infection. This does one of three things. It may heal. If severe it at once penetrates the mucous coat of the bowel and produces an abscess. If mild it may remain as a chronic infected area in the mucosa. This is true because the crypts ending blindly have no drainage from their lowest point except upward. This condition may exist for a long time and then by gradual extension finally break through the bowel wall. On the other hand not infrequently there is a sudden injury or stretching of the parts due to a constipated stool. The crypt lining being diseased and friable easily breaks, thus allowing the infection to enter the deeper tissues. A sudden attack of diarrhea also frequently precipitates the formation of an abscess. The second most frequent site of infection is in the anal canal, due to the presence of a fissure or other anal abrasions or ulceration. The process of the actual abscess formation is the same as in the infection in the crypt of Morgagni. Rarely there is an infection in the rectal wall above the crypts, which is the cause of abscess formation, and even more rarely there is a puncture wound from some foreign body. Occasionally an infection of

the bowel wall above the site of a stricture is the cause.

It would seem then that the majority of these abscesses are due to a direct extension of an infected area, rather than by an infection carried by blood or lymph from an infected area and deposited in a healthy one. The fact that almost all of these abscesses persist as fistulæ which have an internal opening into the bowel conclusively proves this point. Since this opening is in the majority of cases in the base of a crypt of Morgagni it would seem that the site of the original infection is no doubt also in these crypts.

What may happen after the infection has hurdled the barrier of rectal mucosa? The only certain thing is that an abscess will develop. Its rapidity of formation, location and clinical manifestations are extremely varied. As to location it may be said that the infections high up in the bowel wall will produce either a sub-mucous abscess or a deeper one in the space above the levator ani muscle. Infections from the crypts of Morgagni most frequently produce the typical ischio-rectal abscess in the ischio-rectal fossa. In this case usually the infection extends outward between the internal and external sphincter muscles to reach the fatty tissue in this fossa. Fatty tissue here, as elsewhere, has but little resistance to infection, and this is the reason that a large abscess frequently develops. In some cases this area between the sphincters seems to be especially resistant, and the infection burrows downward close to the anal surface, and either forms an abscess in the anal canal or finally passing further down below the external sphincter reaches the ischio-rectal fat and forms a shallow marginal or subcutaneous abscess. Occasionally the infection does the unusual thing and forms an abscess beneath the mucosa of the rectum itself above the crypt where the infection is located. The abscesses arising from a fissure are almost invariably of the marginal or subcutaneous variety. The abscesses arising from infected hair follicles are usually small and appear as an ordinary furuncle. They are circumscribed with no evidence of attachment to the deeper structures.

While these are the basic group of abscesses it must not be forgotten that almost any combination may occur. It must also be remembered that occasionally an abscess making its appearance in this area may not have its origin in, or any connection with, the rectum, for example, the abscess due to the infection of a pilonidal sinus, a tuberculosis of the vertebræ, prostatic or periprostatic abscess, an abscess due to some



pelvic infection. It is not the purpose of this paper to deal with these and other non-rectal abscesses but they must be borne in mind in considering the differential diagnosis.

The clinical course and symptoms of these abscesses vary with the location and virulence of infection. In cases of extreme virulence less than twenty-four hours may elapse before an extremely red and tender mass may be noted. This is accompanied by a marked rise in temperature, leucocyte count, and severe pain. Occasionally the reverse is noted, as the following case will illustrate:

A male, fifty years old, presented himself with a history of pain on defecation for the past three weeks and that he had noticed a hard lump in the right ischio-rectal fossa. This had been present for three months and had gradually increased in size. It was not tender or painful though he was a peddler and sat on his wagon most of the time. His general examination was negative except for an irregular pupil, but his Wassermann was negative, and there was no history of lues. Examination revealed a somewhat circumscribed mass almost filling the right ischio-rectal fossa. The skin over it appeared normal and was not tender. It was hard to the touch feeling very much like a fibroid tumor. Rectal examination showed some superficial ulcerations at Hilton's line on the side adjacent to the mass. These were apparently due to trauma of hard stools passing over a surface which was being encroached upon by an indurated area. Gumma, fibroid, a bursa from the tuber ischii, and an inflammatory mass were thought of. Operation revealed a hard mass which appeared much like a fibroid. Deep in the mass close to the rectum were perhaps 2 c.c. of necrotic material. A microscopic examination revealed only inflammatory tissue. The tumor was not removed except a piece for the frozen section. In less than two weeks the entire mass disappeared under hot applications, and an opening into the bowel could be easily found.

Here of course we had a simple infection of such low virulence that an abscess did not result, but merely an inflammatory mass. These are the extremes. The usual processes are about as follows.

There is a rise in temperature or a leucocytosis of varying degree in all types. In the submucous variety there is usually pain and aching well up in the rectum and bladder symptoms are not uncommon. There is frequently a bearing down feeling. Digital examination will reveal a mass in the bowel wall. A free incision upward from the lowest point of the abscess is indicated. The marginal variety present a swelling very near the anus and often extending up into the anal canal. Free incision is necessary. The ischio-rectal variety present a swelling in the ischio-rectal fossa, and it is evident that the area involved is greater than the marginal variety and extends further away from the anus. This description

fits the frank, well-developed case. It is well to remember that this is not always the picture. In some cases there are all the subjective symptoms, but upon inspection nothing can be seen. If, however, the index finger be inserted into the rectum and the perirectal tissues palpated between the finger and thumb a definite area of induration can be felt. I consider this method of examination most important and one which is very frequently overlooked. It is always well to keep in mind that the abscess does not always develop to a point where it presents externally. In some cases it ruptures back into the rectum through the point of infection without giving any external evidence of its presence. In these cases if a "bifinger" examination were not made the condition would be entirely overlooked. In all cases of abscess the treatment is early and free incision. Do not wait for the abscess to point. Once an area of induration has been found operate at once. Since practically all of these cases have an opening into the bowel it is wise to advise the patient that a fistula is probably present, which may necessitate further operative procedure later. In cases where the sphincter is not involved the abscess may be opened through its internal opening at once thus curing the condition. If the sphincter is involved it is my opinion that in very few cases are we justified in dividing the muscle in the presence of a large abscess cavity and an acute infection. In these cases the proper incision is a cross incision, the inner arm of the cross being carried down close to the anus just to the sphincter muscle. This leaves the muscle intact and at the same time leaves a very short tract which later can be divided at your office under local anesthesia. The tendency of these wounds is to heal too soon on the surface. For this reason I sometimes actually remove a portion of the skin over the abscess, scalping the cavity as it were. The wound should be packed very lightly, but never stuffed with gauze. Healing is usually far advanced in ten days or two weeks, and the cavity is contracted down so that the remainder of the sinus may be divided. The chief thing in these cases is to operate early. Do a wide incision under general anesthesia, if possible, but, if not, at least incise and relieve the pressure. This stops the increase in the size of the abscess and prevents further destruction of tissue. Even a few hours make a difference. If it is necessary to wait twelve or twenty-four hours to operate more radically incise the abscess and then enlarge the incision later. I believe every rectal abscess is an emergency operation and should be operated on as promptly as a pus appendix.

It is seen from this paper thus far that, if the majority of cases are operated on properly in the abscess stage, the fistula which is left is usually negligible. Usually there is a short tract, less than an inch in length, extending from the outer margin of the external sphincter to a crypt of Morgagni or to a point of opening in the anal canal. The treatment of these is simple. If they are laid open from end to end, granulations curetted out and over-hanging edges trimmed they will heal quickly and without trouble. In some of the cases the fistula does not involve the sphincter, and these may be simply opened along the line of fistula. In those cases where the sphincter is involved the fibers should be divided at right angles. This minimizes the distortion of the parts. I doubt if the ends of the severed sphincter ever unite anatomically, but division in this manner gives a better scar formation for the several muscles to contract upon. There is a

rule laid down at the Saint Marks Hospital of London to the effect that all fistulæ having their external opening anterior to a transverse line drawn across the middle of the anus open directly into the bowel by a straight line. Those having their external opening posterior to this line open always in the midline posteriorly. I have found this usually to be the case, and since the majority of patients have the opening in this location it avoids any division of the sphincter except its posterior insertion. In other words, in fistulæ opening internally in the midline posteriorly it is not necessary that the sphincter fibers be divided. This fairly well covers the average case and those which are seen in the abscess stage. This paper does not suffice to deal with the more complicated types which are fairly common, yet form only a very small percentage of the total number of fistulæ. Each of these is a problem in itself and no specific rule applies.

## THE MEDICOLEGAL PHASE OF POST-MORTEM EXAMINATION\*

BY ROBERT S. WESTABY, M.D., F.A.C.S.

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A few years ago it was the fashion to hold at our medical meetings what might be termed operative or wet clinics. To-day the style has changed, and we have our programs made up very largely of dry clinics. From the title of my paper it will be noticed that I am scheduled to hold what might be called a "dead" clinic. Dead as the subject may appear it has cost four years of study and thousands of dollars to be ready to present a few facts this morning which I am sure every doctor here will find of intense interest especially if he does or has done post-mortem examinations.

In this post-mortem clinic I have but one case to present, but the clinical history, the diagnosis, and especially the follow-up through the courts of South Dakota will be interesting enough to keep any physician awake to his danger and thereby avoid the pitfalls which will be found present in this case.

### HISTORY OF THE CASE

On March 16, 1922, a three year old girl died. After her death a physician was called to sign a death certificate. The circumstances surrounding her death and the condition from which she was suffering led the physician to consider the

case one to be turned over to the coroner for investigation. The coroner, after investigating the facts, considered an autopsy necessary to determine whether the death was brought on by unlawful means.

Some ten months afterwards a suit was brought against four physicians, one being the coroner, for \$20,000, for wounded feelings caused by the post-mortem examination. A jury returned a verdict against the coroner for \$1,500 and costs for having made this examination. A motion for a new trial was refused, appeal taken to the supreme court, and the verdict of the lower court was affirmed without change. A petition for a rehearing was denied.

In the decisions rendered by the courts in the case of *E. L. Coty vs. D. S. Baughman et al*, there seems to have been considerable misunderstanding regarding the facts in the case and in the interpretation of the answers to the following questions:

Why was this case turned over to the coroner for investigation?

Why did the coroner consider an autopsy necessary after gathering all the information to determine if the child died from unlawful means?

Why did the coroner believe it was his duty to hold this autopsy and why did he feel he had the right?

\*Presented before the Sioux Valley Medical Association at Sioux City, Iowa. January 18 and 19, 1927.



I feel that a simple presentation of the facts in the case will clear up considerable of the wrong impressions that seem to have arisen in the legal technicalities surrounding this trial.

My first knowledge of the case was when I received a telephone message at 2:30 A. M. from the physician, Dr. D. S. Baughman, who informed me that he had been called to see a patient who had died some time previously and that under the circumstances surrounding the death he considered it a case for investigation by the coroner's office and that he had refused to sign the death certificate.

I had never seen the patient nor had I heard anything about her previous illness. In the morning the undertaker called me and stated that he had the Coty case in his parlors and that he had understood that the coroner would have to take care of the death certificate as there was no physician attending the patient when she died.

I called Dr. Allison who had treated the patient some time previous to her death, and was informed that he had been discharged from the case about three weeks before or so because he had made a diagnosis of tuberculosis; that he had had Dr. Baughman in consultation and that the diagnosis had been confirmed; that a chiropractor, a Mrs. Hoge, had been called to attend the patient and had stated that the child did not have tuberculosis, but only had bowel trouble, and that she would have it well in a short time.

Mr. Coty, the father, was then called to my office and was very emphatic in stating that the child did not have tuberculosis, but had only bowel trouble and that Mrs. Hoge had said that it was not tuberculosis. (Chiropractors are prohibited by law, in South Dakota, from treating infectious diseases.) He stated that the chiropractor had treated the patient for the past three weeks and had treated the child the morning before and at that time promised that she would soon be well; that she seemed to be worse from then until the night following when she died. From my questioning the physicians they stated that they were surprised that the child had died as they saw nothing that would account for so sudden a death from the conditions as they were when they last saw the patient.

I told Mr. Coty that if he was sure the child did not have tuberculosis and that the physicians had made that diagnosis some weeks before that the only way for me to determine what was the immediate cause of death was to make a post-mortem examination. Besides, this child was being treated unlawfully and that it was my

duty as coroner to determine if these treatments had contributed to the death. The examination was set for 1:30 P. M. at the undertaking rooms and he agreed to be there.

As was my custom during my office as coroner I invited all the physicians of Madison to witness the examination, and six doctors were present, besides the undertaker, the father and a sister-in-law, a Miss Fox. I greeted Mr. Coty as I entered the room and proceeded to get ready for the examination. Just as I was ready to make the incision Miss Fox stepped in and said: "The mother does not wish to have this done." I stated that I had talked this all over with Mr. Coty and that it was all understood perfectly. Nothing more was said. Mr. Coty, the father sat just back of the door in the adjoining room and made no objection.

The examination revealed the fact that the bowel trouble was a very extensive tuberculous peritonitis extending from the acute miliary tuberculosis of the lungs. As there was no direct evidence that the unlawful treatments had contributed to the death of the child, the death certificate was signed, and nothing more was heard about it until ten months later, when four of the physicians present at the inquest were made defendants in the suit.

Had the examination disclosed a rupture of the bowel or any other condition that would have been attributed to the unlawful treatments the child was receiving, those facts would have been considered by the coroner's jury and given to the state's attorney to be handled properly through his office.

Having handled forty-eight inquests up to that time in my office as coroner I had many times reviewed the law governing my procedure until I thought I was perfectly familiar with it: Sec. 10179 R. C., 1919 says: "The coroner shall hold an inquest upon the dead bodies of such persons only as are supposed to have come to their death by unlawful means." Sec. 3870 R. C., 1919, says: "A dissection may be made without consent when the death occurs under circumstances in which a coroner is authorized to hold an inquest and a coroner authorizes such dissection for the purpose of inquest."

Here was a case which, in the judgment of the coroner after his investigation, might reasonably have had death brought on by unlawful means, and in the mind of the coroner required the same careful investigation that would have been given a case which had been given some unlawful drug or poison by someone unskilled and prohibited by law from giving the treatment and which

treatment was strongly advised against by at least two physicians who had seen the child some weeks before its death.

The courts of South Dakota have ruled that I did not have a legal right to hold this inquest and autopsy; and since I did not have the explicit consent of the parents, both the father and the mother, therefore the autopsy was unauthorized. I cannot feel that they could have so ruled if the facts had been presented to them on the proper theory.

I will quote an instruction of the jury given by the first trial judge, Instruction No. III; "Now, gentlemen, if you find from the evidence and under the law the court has given you, that the father and the mother did not authorize this autopsy then the plaintiffs in this action would be entitled to recover damages as they suffered, which was directly caused by this autopsy, such a sum as would fully and fairly compensate for the damage which they suffered as a direct result of this autopsy."

It should be mentioned that the court directed a verdict in favor of the other three physicians who were made defendants in the case.

A few quotations from the opinion of the supreme court of South Dakota will be of direct interest to physicians practicing in that state: Appellant calls attention to Sec. 9, Chap. 143, Session Laws, 1921, which provides among other things:

"Chiropractors shall not be entitled to practice obstetrics or treat contagious or infectious diseases."

"There is nothing in the record to show neglect or criminal negligence of any character. A chiropractor is not prohibited by the statute from treating patients. He is only prohibited from practicing obstetrics and from treating contagious and infectious diseases. If a tuberculous patient developed some other disease for which chiropractic was recognized therapeutic agency, and which was neither contagious nor infectious, we think a chiropractor might treat the patient for that disease; if done honestly and in good faith, and not as a mere cover for treating contagious and infectious diseases. In this case the child was suffering from pulmonary tuberculosis. She had developed bowel trouble. There is no question but the chiropractor acted in good faith and treated the child for bowel trouble. We think the employment of a chiropractor under the circumstances here shown raised no presumption and there was no evidence of either negligence or neglect."

"Appellant contends that he had a right to perform this autopsy by virtue of his office of coroner regardless of the consent or objection of the parents."

"The statute provides the coroner is authorized to hold an inquest 'upon the dead bodies of such persons only as are supposed to have died by unlawful means,' Sec. 10179 R. C., 1919."

"It will be noticed that the right of the coroner

to hold an inquest is limited to such persons only as are supposed to have died by unlawful means. The phrase, 'supposed to have died by unlawful means,' does not give the coroner an unlimited, capitious, or arbitrary power to hold inquest."

"The duty of a coroner to hold inquests rests on sound reason, on that reason which is the life of the law. It is not a power to be exercised capiously and haphazardly against all reason." County of Lancaster v. Mishler 100 Pa. St. 624, Sec. 3871 and Sec. 3874, Subdiv. 2, R. C., 1919.

"In this case it was clear from all the evidence before the coroner that the patient died either from tuberculosis or from bowel trouble. Both of these were natural causes of death. There is no grounds to base a supposition that the child died by unlawful means."

"It is admitted before this autopsy was performed the mother notified the doctor she did not wish it performed, and in reply to such notice the doctor said, 'we will go on with the autopsy.'" The doctor seeks to justify the autopsy by saying the father did not object when he told him he would make the autopsy and by other conduct which he claims amounted to consent. There is a sharp conflict between the doctor and the father on this question, and the jury have found that the parents of the child did not consent to the autopsy. We think the rights of the father and the mother are equal in the body of their deceased child and that the consent of both to an autopsy would be necessary where the father and mother were living together and both were within this state.

"The coroner having no right to perform the autopsy in this case, it was immaterial whether or not the autopsy was performed in a skillful manner.

"Our attention is called to Sec. 9909, R. C., 1919, making it necessary that a primary death certificate be made before any burial occurs. It is sufficient to say as to this that it was not made the coroner's duty to furnish the death certificate in this case and by the undisputed evidence it clearly appears he was never requested to do so.

"If there was no attending physician any person having knowledge of the facts could have obtained a preliminary death certificate by making the proper affidavit before a justice of the peace."

The foregoing are quotations from the opinion of the supreme court of South Dakota.

You probably have sensed before this the real reason why the coroner did not have a directed verdict the same as the other physicians in the case. In case you have not may I state the fact that it was improper and inadequate defense. The defense was proper and adequate as far as the physicians were concerned, but I was counseled in the case not to use the unlawful theory as justification for holding this inquest, and therefore the facts were never presented to the courts. I reasoned at the time that if I was not allowed to use my legal justification for holding the inquest I would have no defense at all. It was insisted that we stick to the defense that it was necessary to hold the post-mortem for the pur-



pose of making a proper death certificate, and the result proved as I had predicted that it was not adequate defense.

Under my protective contract the company assumed the burden of my defense and through their counsel a theory of defense was adopted which did not bring out sufficiently my legal justification for holding the inquest. I feel very certain that had a theory for my defense been used which showed the legal justification which I had to hold the inquest, that the supreme court of my state would no doubt have had a different opinion in the case, and would have adhered to the rule given under Section 3870 of our code which holds that a dissection may be made without consent "when the death occurs under circumstances in which a coroner is authorized to hold an inquest and a coroner orders such dissection for the purposes of inquest."

If the supreme court had known that the bowel trouble was tuberculous peritonitis, it would scarcely have stated that the chiropractor was within her rights, when chiropractors are pro-

hibited by law from treating infectious diseases.

In conclusion, I want to bring just four points to the attention of physicians:

1. When defending yourself in a lawsuit don't take anything for granted, but use all the ammunition you have at your command, no matter whom it offends.

2. See that a proper legal foundation is laid which justifies your acts and that these are properly called to the attention of the judge through your counsel. This applies not only to the right of the coroner but of the physician as well.

3. If you are going to do a post-mortem examination in South Dakota you had better arm yourself with the written consent from the next of kin. If the examination should be on a minor you must get the consent of both the father and the mother or you can be held for damages. Even if you are a coroner you had better be doubly fortified for someone may question your right.

4. It is advisable to be protected by adequate medical protective insurance.

## THE ADMINISTRATION OF AN ANESTHETIC\*

By PAUL V. MCCARTHY, M.D.

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I have chosen a rarely discussed, rather elementary subject for my paper, but, when we consider the matter, the proper administration of an anesthetic is an important part of an operation, and the degree of skill with which it is given has much to do with the progress of the surgeon and the recovery of the patient. If the anesthetist is well grounded in physiology, knows the probable reactions of the various types of individuals, has confidence in his ability, and is able to anticipate the surgeon, the work in hand will proceed with the minimum loss of time and with the greater comfort and safety to the patient.

The preliminary examination of the patient by the anesthetist is the ideal method of procedure. When we stop and think of an operation from the viewpoint of the patient, it is a matter of grave importance, and, as a rule, it is with fear and apprehension that most people approach an operating table. The allaying of this condition of mind has much to do with the successful administration of the anesthetic and with the condition of the operation itself. If the anesthetist is able to visit the patient in his room previous

to the time set for operating, there will be formed some common bond of understanding and trust which will have much to do with the anesthetist's success. At the same time, an idea of the functional condition of the heart and lungs can be gained along with the general condition and type of individual. Knowing the various differences in reaction in the various types, as the emphysematous, the sthenic, the alcoholic, and those laboring under uncontrollable fear, and how various diseases, such as exophthalmic goiter, fever, sepsis, status lymphaticus, head injuries, etc., will affect the course and conduct of the anesthetic, the anesthetist can prearrange his plans accordingly.

It is the attention to minor points in technic of administration, the preoperative care and the supervision of the patient to complete regaining of consciousness, that marks the skill with which the anesthetic is given. The recognition of the mental state of the patient is important. A patient, mentally alert, nervous, and apprehensive as to the outcome, is more difficult to anesthetize than one in whom this condition of mind has been ameliorated. In order to accomplish this, the use of morphine, given in proper dosage

\*Presented before the Aberdeen District Medical Society of South Dakota, at Aberdeen, S. D.

some forty-five minutes before time of commencement of the anesthetic, renders the mind susceptible to anesthesia. Having thus prepared the patient, nothing should be done that will tend to interfere with this mental condition. If the patient arrives at the operating room semiconscious from his preliminary medication, the anesthesia is well under way. If a patient prepared in this manner is taken directly into an operating room, where the noise of rattling instruments, voices from the scrub-room, and other distracting influences force onto his slightly numbed senses that he is there for the purpose of being operated on, harm has been done. If these elements of distraction cannot be avoided, it is better to have a separate room with only the anesthetist and an assistant present. Quiet surroundings and peace of mind enable the anesthetist to assure the patient that all is well, and with this thought firmly impressed on his mind he slides into the induction, through the stage of excitement, with a minimum amount of anesthetic and fuss.

The table should be well padded and of sufficient size to allow the patient to lie in comfort. If there is to be any change of position during operation, this should be prepared for in advance. Restraining appliances should be in position, to be used as needed. It is in most cases less jarring to the patient's mental attitude to be allowed to pass through the induction period without the applying of restraint. As the excitement stage is reached, the leg strap is placed snugly over the knees. If wrist straps are to be used they should be well padded and be adjusted so the arms are kept close at the sides, well out of the way of the operator and in no danger of pressure-paralysis from the arms hanging over the edge of the table and resting on some nerve during the relaxation of surgical anesthesia.

The anesthetist should be provided with an efficient jaw-depressor, an airway tube, such as a Connell, emergency stimulants, etc. If blood-pressure readings are to be taken, the instruments should be in position at the start. An assistant stands by to give aid as needed.

The primary purpose of an anesthetic is to relieve pain incident to an operation. It is through the narcotic action of various drugs that we are able to obtain anesthesia. In their depressive action these drugs abolish temporarily the functions of the cerebrum and spinal cord while the respiratory center is still able to perform efficiently and circulation remains unchanged. The administration of the various

narcotic gases and vapors through the lungs makes it possible to gage their dosage very accurately up to the danger point, and to maintain a state of anesthesia only as long as the operation requires.

Of these various substances, up to the present time, ether has been regarded as the safest. Ether is quickly converted into a gas at room temperature, possessing a comparatively high vapor tension. It has the property of penetrating body tissues and fluids with ease. It has a special irritating effect on the sensory nerve endings with a subsequent depressing of their sensibility. Its action, after absorption, is almost exclusively on the central nervous system, behaving in this respect as the alcohol from which it is derived. It is excreted directly through the lungs, there being little destruction within the body. It is owing to the greater susceptibility of the central nervous system to anesthetics, ether in particular, that we are able to use these substances which in themselves are called poisons. They may be used as anesthetics because they depress the cerebrum and the spinal reflex centers, while the vital centers of respiration and circulation are able to resist their paralytic action much longer and in greater concentrations. It is appreciating these facts and avoiding concentrations which will affect the vital centers, with the subsequent distressing results, that raises the giving of an anesthetic to an art.

The process of anesthesia can be divided into very distinct phases. The primary phase, or stage of induction, exists from the beginning of the anesthetic up to the time when the concentration of the ether in the blood becomes of sufficient strength to overcome the reception of sensory stimuli in the cerebrum. For the reason that the primary action of ether is that of irritation to sensory endings, followed by one of depression, this stage should be of sufficient length to allow for a gradual increase in the ether concentration to a point where the delicate sensory endings in the nasal, pharyngeal, and tracheal mucosa are depressed, thus eliminating retching, coughing, and spasm of the glottis. During this time the patient goes through a condition resembling mild intoxication in which consciousness becomes clouded, the mind being occupied by confused ideas. Proceeding, this condition increases and the excitement period is reached. This period resembles profound intoxication, and it is apparent that the functions of the cerebrum are being blocked out. The speech becomes disconnected, gradually fading into mumbling, then silence; the actions purely reflex, then cease; and



the respirations gradually become deep and regular. It is during this period that the forcing of the concentration of the anesthetic mixture rushes the patient on through into the stage of surgical anesthesia, thus avoiding that time during which there is apt to be struggling and resistance on the part of the patient.

This is the desired time at which it is proper for the surgeon to commence, and it is in the anesthetist's ability to carry the patient in the upper planes of this phase that the success of the anesthetic rests. In this condition, the patient lies completely relaxed, motionless, and without sensation. The eyes are turned inward, rolled up, and the pupils are contracted as in deep sleep. The respirations are regular, full, and slow. The pulse, which up to this time, as a rule, has been rapid, due to the excitement, begins to tend toward normal, depending upon the condition and disease of the patient. The face is flushed and of ruddy color. This vascular condition of the face and the character of the respirations are the chief guides in carrying the patient along. It is not well to depend on the corneal reflex in a patient who has been previously given morphine, since morphine will have rendered the reflex sluggish; and, further, the practice of lifting the mask to expose the eye has the double disadvantage of being inducive to a postoperative conjunctivitis, and at the same time destroys the technic of administration by shifting the mask.

The respirations in the upper plane of surgical anesthesia are of a regular, deep, rhythm character. Realizing that the anesthetic is both introduced and excreted through the respiratory system, the anesthetist's first thought is to keep the air passage free from obstruction. During the early stages of induction the character of respiration may go through many changes, such as coughing, prolonged inspiration or expiration, due to the irritant action of the ether on the nasal, pharyngeal, and tracheal mucosa. Later when the action of the ether has changed to one of depression, these reflex manifestations disappear. Toward the end of the induction period, when the concentration of the ether in the blood is gradually rising, there is a stimulation of mucous glands throughout the entire respiratory tract. With the abolition of the coughing reflex, this mucus collects in the more dependent portions and may be inspired deep into the smaller bronchi, and is often the contributing cause of postoperative pneumonia. The preliminary medication with atropine will do much to eliminate this annoyance, facilitating and rendering the an-

esthetic safer. As surgical anesthesia is approached, muscle tone is lowered, giving rise to various snoring sounds. Inability to breathe through the nose and faulty position of the head may also cause difficulty. Placing the head directly on the table without a pillow eliminates any forward bending of the trachea and gives a direct air passage. Rolling the head to one side eliminates the very tiring practice of holding the jaw forward, and, with the head in this position, it is seldom there is difficulty with the patient swallowing the tongue. This accident in itself is indicative of very deep anesthesia and, without doubt, is one that can be avoided by staying in the upper planes of surgical anesthesia. The anesthetist at all times should be prepared for conditions arising which may cause blocking of the air passages. Many times those of the heavy set, thick-neck type, who are continually cyanosed and take an anesthetic badly, will clear up and proceed with no further trouble with the introduction of an airway tube.

The anesthetist endeavors to precede the surgeon. Knowing the technic in various surgical procedures, he is able to plan the patient's depth of anesthesia in advance of the surgeon's progress. By this method he is able to carry the patient along on a more even plane of anesthesia and is able at all times to prevent the breaking through of the more powerful stimuli, due to manipulation by the surgeon, causing an interruption of the anesthesia and producing a situation which the anesthetist often endeavors to overcome by flooding the patient. For instance, during an operation on the gall-bladder, when the surgeon is rotating the liver, exposing the field, there is more or less interference with respiration. If, during this time, the anesthetist attempts to force the anesthetic he will reach the desired plane only when the surgeon has ceased his manipulations; and, with the removal of the stimuli, the patient may drop into a plane of anesthesia where the margin of safety has been pushed to the limit. It is evident that it would have been better to have prepared the patient for this manipulation by having placed him into a lower plane of anesthesia previously and to have allowed him to rise to light anesthesia during the manipulation and then to proceed.

This brings up the point that the percentage mixture in the anesthetic supply varies as the operation proceeds. As long as anesthesia is desired, this supply should be continuous. It is the anesthetist's aim to carry at all times the patient in anesthesia on a plane with as wide a margin of safety as possible. If the supply of

the mixture is discontinued from time to time, the patient rises and falls in anesthesia to a greater extent and consumes larger quantities of the anesthetic than if kept on a continuous mixture of varying concentration.

The anesthetist is in much better position than the surgeon to know the patient's condition, and any unfavorable symptom denoting impending shock should be relayed to the surgeon at once. A steadily rising pulse, a gradual increase in the size of the pupil, a development and increase in pallor, with profuse perspiring, are signs which indicate that the patient is not doing well; and, unless something can be done to improve the condition, the operation should be speedily brought to a close.

It is the alertness of the anesthetist, with his constant attention to details, that inspires in the surgeon confidence of his ability, making it unnecessary for the surgeon to burden himself with the continuous outlook as to his patient's condition, and creates a spirit between them which does much to expedite the operation, makes the after recovery of the patient less difficult, and renders a greater chance of the desired result for which the operation was performed.

## BOOK NOTICES

ESSAYS IN THE HISTORY OF MEDICINE. By Karl Sudhoff, M.D., Translated by various hands and edited by Fielding H. Garrison, M.D. \$5.00 postpaid. Vol. II of the Library of Medical History published by Medical Life Press, N. Y., 1925.

Here is a volume translated and arranged by H. Fielding Garrison and his co-workers from the original German by Karl Sudhoff. The translator states that he has made selections from the original work which will best portray to us the marvelous capacity of this man, Sudhoff, whom he so ably presents. When such a man as H. Fielding Garrison speaks so highly of any worker as he does of Sudhoff, it is worthy of any student's time and effort to render him the tribute of his consideration.

One of the remarkable features in the short biographical sketch which precedes these essays is the recounting of the monumental efforts of Sudhoff. "By the end of 1913 Sudhoff had already published 456 books and papers, and nearly 1,800 reviews."

In this volume we find such a fine expression of English medical investigation as is rarely found in any exposition of this sort. The diction and form of expression are more those of an exquisite literary accomplishment as found in prose poetry than in a scientific treatise of this sort.

It presents before us the history of medicine in all its allied branches from a very broad point of view, uniting the earliest period of known medical knowledge with the present, and grouping in intimate relation the arts, literature, and sciences.

The beautiful descriptions of scenic reviews, allocating the process of medicine lends such an atmosphere of vitality and reality to the portrayal of the various steps in medical progress as to almost place one in foreign parts. It certainly stimulates one's wanderlust.

In the last portion of this volume we find intimate studies of the life of Goethe, whose life was of such a scientific trend and so intimately connected with the development of such men as Johannes Mueller and Johan Abel, and with Sudhoff himself, as to merit a place in this work.

Finally, there is throughout, such a presentation of biographical sketches, such a respectful, fine handling of character study, and such a remarkable portrayal of the influences which one man has upon the development of another as to force upon one's thoughts a realization of the deepest friendship that life can hold; for no man can express these delicate emotions without having them within himself.

—DANIEL H. BESSESEN, M.D.

International Clinics. Vol. 3, Thirty-sixth series. September, 1926, 302 pages. Philadelphia, London: J. B. Lippincott Co.

For a volume which presents the advance work of the year, this volume presents one of the foremost at present extant. Most of the subjects covered in the work relate to brain and nerve diseases; however, each field is touched, so that there is matter for contemplation by any internist or surgeon who wishes to keep in touch with the latest in the field of medicine and surgery. Much of the material herein contained requires study rather than the ordinary process of reading. Some of it requires a previous knowledge of medicine, almost such as goes with a specialty. Other interesting points concerning these International Clinics are the biographies sketched throughout its pages. In this particular volume the life of The Right Hon. Sir Clifford Allbutt, is given in brief.

The farther one enters into the scientific lives of men who contribute to a leading quarterly such as this, the more one is impressed with the tremendous effort and constant application which are required, not only to produce such studies as these, but merely to keep abreast of them. The depth of thought and extent of research of these contributors inspire one with renewed vigor in reviewing medical literature. Henry Cattell, the editor of this magnificent quarterly is to be complimented on the elegance of this publication.

—DANIEL H. BESSESEN, M.D.

THE MEDICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every month.) Volume X, Number IV, January, 1927, New York Number. Per clinic year, (July 1926 to May 1927). Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company.

This volume includes a group of very interesting and instructive papers. The first article, a symposium on "Gastric and Duodenal Ulcer," discusses the medical and surgical aspects of ulcer, together with the laboratory findings, and reviews the subject very completely.

A clinical study on "Anemia," by Dr. I. W. Held, is one of the best articles written discussing the



hematopoietic system. It is easy to read and shows the result of a great deal of excellent work.

A paper on "Subacute Nephritis," by Drs. Mosen-thal and Klemperer, discusses a type of nephritis which at present is attracting a great deal of interest. A case is given with a full discussion from the clinical and laboratory standpoint.

Dr. Edward King gives an article on the "Diuretic Action of Urea and High Protein Diets." In this he discusses the action of urea, the amounts used in treatment, and the selection of cases suitable for treatment. The diuretic action of high protein diets is dependent upon and proportionate to the amount of urea it liberates.

A number of other papers of no less importance and interest make this New York number a very excellent edition.

—A. E. CARDLE, M.D.

**DISEASES OF WOMEN.** B. Harry Sturgeon Crossen, M.D., F.A.C.S. Sixth edition revised and enlarged with nine hundred thirty-four engravings, including one color plate. Pp. 1,005. St. Louis: C. V. Mosby Company, 1926, price \$11.00.

This sixth edition contains considerable new material, such as advances in *x*-ray diagnosis and therapy of pelvic diseases, tubal insufflation, pneumoperitoneum, visualization with iodination of tubal and uterine cavities. The pathological portion

has been augmented somewhat in material and illustration.

Theory and therapy of the glandula products receive consideration according to their merits. The description of operative technic is essentially unchanged.

Six editions of this book indicate its value to the general practitioner, student, and specialist in this field.

—J. H. SIMONS, M.D.

**HUMAN PATHOLOGY.** A Text-book by Howard T. Karsner, M.D., Professor of Pathology, School of Medicine, Western Reserve University, Cleveland, Ohio. With an introduction by Simon Flexner, M.D. Twenty illustrations in color and 443 black and white. Philadelphia: J. B. Lippincott Company, 1926.

The book follows the usual arrangement of text-books on pathology, proceeding from general to special pathology. The book is adapted to the needs of the student and practitioner who wishes a brief and clear explanation of the tissue reaction to the disease process. It is exceptionally well written and contains adequate and clear illustrations. The bibliography includes the important contributions to pathology and is particularly designed for the student who limits his reading to the English language.

—FLOYD GRAVE, M.D.

# THE JOURNAL-LANCET

Represents the Medical Profession of  
Minnesota, North Dakota, South Dakota and Montana  
The Official Journal of the  
North Dakota and South Dakota State Medical Associations /  
The Hennepin County Medical Society  
The Soo Railway Surgical Association  
and The Sioux Valley Medical Association

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## THE AMERICAN MEDICAL ASSOCIATION

The meeting of the Association in Washington, D. C., this year was a meeting of considerable prominence. It gave a very good illustration, too, of how the members come drifting in on various days. Naturally the officials, and many of the Delegates, arrived on Saturday, May fourteenth, while the bulk of the men came in on Monday and Tuesday. Monday's registration was 2,653, Tuesday's registration was 1,644, and Wednesday's registration was 1,408, while the total registration was 6,450; an unusual registration, but considering the place and time, it was to be expected. It is only exceeded by the registration at Atlantic City, which sometimes goes over the seven-thousand mark. Minnesota did its share in the point of attendance, there being about 100 registrants from this state alone. Very naturally the states nearer Washington were better represented.

The headquarters of the Association were at the Mayflower Hotel, a hotel which is amply able to care for a large number of people. It extends from one block to another, with wide long corridors having meeting rooms on either side, providing ample facilities for accommodating several Sections. It was interesting to note the various members of the Association who

were distributed over the entire surface of Washington. It was equally interesting to note that the Sections were just as variously distributed as the hotel reservations. The unfortunate part of meeting in Washington is that meeting places are apt to be at long distances from one another; it is very difficult to attend a Section meeting and have to go a mile or a mile and a half to another that is equally interesting.

One would naturally expect the work to begin at once, that is, on the day of the first registration, but this is not true of the meeting of the American Medical Association. Monday and Tuesday are devoted primarily to the House of Delegates and also to the meetings of various allied associations, like the Associations of Radiology, of Public Health, of Internal Secretions, and other similar societies; although they are not a part of the American Medical Association, they are associated with it.

The meeting of the Association proper begins on the evening of Tuesday and is usually held in an auditorium, and this year in Washington it met at the Arcadia, which seated only 6,000, while 8,000 or 9,000 sought admittance, but it was impossible for them to get there. This auditorium happened to be a long distance from the various hotels and meeting-places. The result was that, as is usually the case, the people of Washington had precedence over the A. M. A. members and crowded the meeting because his excellency, the President of the United States was to address the Association. The meeting was called to order by the retiring president, Dr. Wendell C. Phillips, of New York. Announcements were made by Dr. W. G. Morgan, of Washington, D. C., who was chairman of the local committee on arrangements. The Address of Welcome was given by Dr. Charles S. White, President of the Medical Society of the District of Columbia, which was followed by the introduction and installation of President-elect Jabez North Jackson, of Kansas City, Mo. Upon his installation he delivered his presidential address.

In order to make up, perhaps, for the inability of the medical men to see the President of the United States, he and Mrs. Coolidge received Fellows of the American Medical Association in the South Grounds of the White House at 12:30 on the following day, Wednesday. But, as it happened, it rained, and there were not very many present, and it must have been a very disagreeable duty for the President and Mrs. Coolidge to perform under such circumstances.



The White House was undergoing repairs, and they could not do otherwise.

The exhibition hall was in another auditorium about a mile from the Mayflower Hotel. The building itself was rather cramped for such a city as Washington, in which there were the registration booths as well as the scientific and pathological exhibits. The exhibits came up to the usual requirements and were very well attended in spite of the distance from the hotel area. The pathological exhibits were wonderfully instructive. The various Sections met at many hotels and the various alumni luncheons were scattered over Washington. The American Medical exhibit, with its various publications, its library, including the first number of the *Quarterly Cumulative Index Medicus*, was on display, as well as the products of the bureau of investigation, which included quack and fraudulent and worthless patent medicines and pseudomedicines, all of which were handled without gloves, that is, we mean to say there was no question of the authenticity of the investigations made by this bureau. The meeting-place of the House of Delegates was in the auditorium of the Medical Society of the District of Columbia, about two and a half blocks from the Mayflower Hotel.

Mention must be made, too, of the usual program of the motion-picture theater, which included all sorts of interesting studies, both pathological and normal, highly instructive both to the lay and the medical mind. This, with the other undertakings of the A. M. A., shows that it is a tremendously important educational feature in the life of the Government.

The House of Delegates, composed of approximately 175 members present, held various meetings, an all-day meeting on Monday, another meeting on Tuesday, and one on Thursday, and Wednesday. As usual, it was presided over by its very able master, Dr. Fred C. Warnshuis. An enormous amount of business was transacted, some of it of great importance, and a detailed account of it will be found in the *Journal of the A. M. A.* It was before the House of Delegates that the invitations for the next meeting of the Association were presented; and the House of Delegates was a most interesting place on Thursday afternoon when the participating representatives from the various states presented their invitations. The first invitation came from Kansas City, the second invitation came from Portland, Oregon, and the third invitation came from Minneapolis. As usual, there was much friendly competition in presenting the invitations. Very naturally there was a good

deal of political maneuvering between the various states in order to present the best side of the meeting-places proposed. Portland, through its member of the Board of Directors, Dr. J. A. Pettis, invited the Association to Portland, but decided finally to withdraw the invitation until 1929, consequently the contest narrowed down to a skirmish between Kansas City and Minneapolis; and Minneapolis, after one vote, secured a majority of the votes, and as a result Minnesota is to entertain the American Medical Association in Minneapolis in 1928. The time and date of the meeting will be determined by the Board of Trustees, but it is expected that it will be some time early in June. Minneapolis feels quite prepared, now, to undertake the tremendous responsibility of entertaining from 6,000 to 8,000 or perhaps 10,000 people. It feels that its hotel capacity will not be overtaxed, and it also knows that St. Paul is nearby and will probably be selected by a good many as an abiding place during their stay. The distance between the two cities is short, requiring only from twenty to twenty-five minutes. The editor wishes to congratulate the Committee on the method that was used in securing the Association meeting. The Committee included Dr. W. F. Braasch, of Rochester; Dr. Herman N. Johnson, of Dawson, who presented the invitation, and as Dr. Johnson's experience in the Legislature had made him an adept at ethical medical politics he kept a watchful hand over the other members of the Committee; Dr. Charles B. Wright, Dr. Horace Newhart, of Minneapolis; Dr. J. C. Litzenberg, of Minneapolis, and Dr. W. L. Burnap, of Fergus Falls, both delegates; Dr. Stanley Maxeiner, President of the Hennepin County Medical Society; Dr. Henry W. Cook; Dr. S. E. Sweitzer; Dr. R. E. Farr, who was extremely active and although not well at the time he nevertheless exerted his influence over a number of men; Dr. Donald McCarthy, and the editor of *THE JOURNAL-LANCET*, Dr. W. A. Jones. In addition to this committee, the Ramsey County Medical Society provided a strong endorsement to the invitation for the meeting at Minneapolis, and was most ably represented by an active, hard worker, Dr. J. T. Christison, also Dr. E. A. Meyerding, Secretary of the Minnesota State Medical Association,—both of St. Paul. Dr. A. J. Chesley was also closely identified with the Committee in its work, and in all probability he will secure a meeting of the National Health Association at about the same time the American Medical Association meets here. We would like to mention many others who were very active in helping Minne-

sota, and among them the Delegates from North Dakota, Dr. E. A. Pray, of Valley City, and Dr. R. L. Murdy, of Aberdeen, South Dakota. We found that we had a number of friends, too, in the East who were very anxious to come to Minnesota to see the Twin Cities, the wonderful lake regions and the beautiful wooded country in Minnesota. Minneapolis aims to take care of the convention within a radius of two blocks. We anticipate using the new auditorium, which has a very large seating capacity, nearly 11,000, the auditorium to be divided, if necessary, into two large halls for the larger Sections with a few smaller halls for the smaller Sections on the floors above or the floors below. All of the exhibits are also to be in the new auditorium, which has ample space and wonderful possibilities in the way of assistance to the exhibitors, including light, heat, and power,—quite a novel feature and quite different from anything so far constructed. It is expected, also, to use the Lyceum Theater, the old auditorium building, with its seating capacity of 2,300, and which, if necessary, will house several Sections. Between these two auditoriums are two large churches which can be used if it is so desired. Some of the hotels will take in a few Sections, naturally, and three of these hotels at least are within two blocks of the meeting-place, so there will be no long distances between the meeting-places of the various Sections. Our hotel accommodations are ample, as has been said before, but the wise man will make his hotel reservations early. We anticipate a wonderful time, but we also anticipate a lot of hard work before the session is completed. It means that a lot of our medical men will have to sacrifice much of their time to the success of the meeting, but we know they are cheerfully willing and able to do so.

#### THE MINNESOTA STATE MEDICAL ASSOCIATION

The fifty-ninth annual meeting will occur at Duluth. The meeting of the House of Delegates on June thirtieth will be at eight o'clock in the morning, and the regular meeting of the Association will be held July first and second, with headquarters at the Hotel Duluth. The program is very interesting and embraces a great deal in the line of medicine, with clinics and a very good symposium on "Immunization and Acute Infectious Diseases," which will be participated in by Dr. I. A. Abt, of Chicago. Then comes a symposium on "Pulmonary Tuberculosis." The evening of Thursday is devoted to the usual

"Medical Economics" meeting, which includes a talk by Minnesota's well-known friend, Dr. Herman N. Johnson, of Dawson, on "Legislation and the Doctor." Friday morning at 8:00 A. M. (this 8:00 A. M. hour seems to be most ungodly and wholly too early) there will be a symposium on surgery from a non-operative point of view, followed very naturally by a symposium on the gall-bladder and liver, in which the operative point of view is very much in evidence.

Then comes an intermission followed by the "Non-Operative Treatment of Fractures," illustrated by moving pictures by Dr. F. D. Dixon and Dr. R. L. Diveley, of Kansas City.

Friday noon another meeting of the House of Delegates at 12:30, a very seemly hour. In the afternoon the hours will be devoted largely to Pathology, Gynecology, and a symposium on the "Gastro-Intestinal Tract." In the evening comes the inevitable annual banquet. The toastmaster of the evening will be Dr. C. H. Mayo, so all may expect a glorious time.

There will be speeches by Dr. W. A. Coventry, the President of the Chamber of Commerce, and the Hon. Theodore Christianson. The Women's Auxilliary will be presented by Mrs. J. T. Christison. The State Association will be discussed by the past president, Dr. Johnson, and the present president, Dr. W. F. Braasch. All this is to be followed by dancing, a real combination.

On Saturday morning, July second, more evidence of what the doctors can do in tuberculosis in children will be presented, a pediatric clinic by Dr. Abt, and various and sundry other items.

It is quite evident that the entire program is going to be a full one and that the Women's Auxilliary is going to occupy a large part of its time with discussions on all sorts of things pertaining to women's work. The usual alumni banquets will be held, the usual automobile rides will be furnished, and there will be many other things of interest.

#### THE AMERICAN NEUROLOGICAL ASSOCIATION

The meeting of this Association took place at the Hotel Ambassador in Atlantic City on May twenty-fourth and twenty-fifth, and the editor feels a personal pride in recording his impressions. After spending three days in New York on rest attainments, recovering from overwork in Washington, he reached Atlantic City at the dinner hour and much to his surprise found it extremely cold, windy, and disagreeable. On the following day and a half an impenetrable fog



obliterated the ocean, making it impossible for one to see more than a distance of a few feet at a time. But the American Neurological Association met on schedule, and its introduction was the presidential address of Dr. Peter Bassoe, of Chicago, a very entertaining account of the early history of neurology and psychiatry and told of many illustrative and amusing changes in the attitude of the neurologist and psychiatrist. His address was a historical address and will make very good reading. Later, on the following day, at the banquet of the Association, Dr. Hugh T. Patrick, a Chicago confrère, said of Dr. Bassoe that he was "one of the wisest, the most just, and the best among us."

The rest of the program was taken up with very interesting subjects, particularly those dealing with the development and structure of the neuroglia and microglia, not only as to anatomy but as to physiology and the connection with chronic vascular disease. Perhaps the subject would not make a good novel, or anything of that sort, but it was interesting from a scientific point of view—perhaps. Dr. Charles K. Mills, the veteran psychiatrist of Philadelphia, gave a very interesting talk on "The Functions and Diseases of the Cerebellum, with a Discussion of the Evolution of Our Knowledge of the Brain During the Last Sixty Years," and no one is more able to do this than Dr. Mills. It is interesting to see these elderly men who have participated in medical meetings for more than fifty years going strong still except, perhaps, feeble in eyesight but otherwise clearheaded. One feature of the program was an address by Dr. G. H. Monrad-Krohn, of Oslo, Norway, who gave a very clever picture of "The Clinical Neurology of the Facial Nerve." His English, it was delightful to observe, was perfect. He, by the way, is an intimate friend of Dr. Bassoe, of Chicago, and Minneapolis men had the pleasure of entertaining both of these prominent neurologists on the eighth of June. They will have the further privilege of seeing them both at the meeting of the Minnesota Neurological Society, at Rochester, on June eleventh.

The titles of some of the papers were amusing, to say the least. One which caused the greatest comment was "On the Progressive Decrease in the Number of Normal Purkinji Cells with Advancing Age in the Albino Rat." Although one may be inclined to make light of this topic, to be read before a body of neurologists and psychiatrists, there may be something in it; but it will take some time for this knowledge to penetrate very far into the brain of the present writer.

A new method of treatment was advocated by Dr. Abraham Myerson, of Boston, in puncture of the internal jugular vein. The site of the puncture is in the crevice between the perpendicular ramus of the jaw and the mastoid process of the temporal bone. The idea of this investigation is that blood may be withdrawn from the internal jugular, the internal carotid, and the median basilic vein and a comparison made of the biochemical contents of the blood derived from these three sources. In addition to this procedure a spinal puncture is done and in this way it is possible to study the blood going to the brain and compare it with the two outlets from the brain, the internal jugular vein and the cerebrospinal fluid. Just what it is good for we do not know as yet.

Dr. Walter Freeman, of Washington, D. C., gave the snappy paper of the program, the title of which was "Biometrical Studies in Psychiatry" and the relation of dementia precox to the small heart. His paper was read in about seven minutes and was a record of time-saving. It might profitably be followed by others who are inclined to talk long and tirelessly themselves. The trouble with most of these programs is the papers prepared by the men whose "terminal facilities" are inadequate. If they did but know it, a short paper without a lot of detail makes a more lasting impression than a longer paper with a lot of verbiage.

One paper, read by Dr. Bronson Crothers, of Boston, entitled "Has the Pediatrician Any Place in the Mental Hygiene Movement?" was a very interesting paper because the author felt the pediatrician who attempts to form his opinion on mental hygiene is apt to become bewildered. He said, further, that on one hand he finds people who regard psychiatry as such a simple subject that it can be taught in pamphlets to any literate human being; on the other hand, he finds people who tell him that no one who has not had an adequate psychiatric training should even consider conduct and that no one is truly useful until he has been psychoanalyzed himself. A very amusing discussion took place which incidentally revealed the attitude of a good many neuropsychiatric men as to the investigation of children, of psychological conditions, of behavioristic attitudes that is left almost entirely to committees who are uninformed, who have no knowledge of either conduct or behavior, nor any understanding of mental hygiene,—yet they protrude themselves into the field of vision. Had they been there to hear the discussion and damnation of the whole outfit they would have reconsidered

their points of view. It illustrated what Everett Dean Martin said: "The surest way to defeat learning is to place it in charge of those whose own education has stopped."

Dr. Morton Prince, of Boston, whom everyone knows who knows anything of the neuropsychiatric side of Boston, had a very curious exhibition and collection of "So-called Automatic (Subconscious) Drawings and Paintings," which he discussed and commented on much to the amusement of the audience present.

There were other papers presented, but it would be impossible to go over them all or comment on many, except to say that the whole program was a very dignified affair and assumed, at times, a very serious aspect and at other times was quite human. If one could absorb all of the papers which were discussed and read at this meeting one would be tremendously well informed.

One very important comment should be made, and that it was expected that this meeting of the Neurological Association would be held in Chicago; but fearing that these men from the East (delicate they must be) would hesitate to travel such great distances, from Cleveland, Boston, and Philadelphia principally, Dr. Bassoe and his advisors decided to change the place of meeting to Atlantic City, where all could be within easy distance and swift reach of their own homes. The Chicago members went further than this, and gave two wonderful luncheons to the entire Neurological Association, on two successive days showing that they were magnanimous and willing to co-operate in any way, and to make everyone comfortable. The luncheons and the lunchers present were enough to warm the heart of any man who is an alleged neurologist.

#### THE NORTH DAKOTA STATE MEDICAL ASSOCIATION

There was a very good attendance, and a remarkably well arranged program was given at the North Dakota State Medical Association meeting held on June first and second of this year at Grand Forks. Dr. N. Oliver Ramstad, the presiding officer, had everything well in hand, and the program went off with celerity and dispatch.

The first morning was taken up by a symposium on goiter, preceded by the address of the President, Dr. Ramstad. The only objection the editor has to suggest, to himself if to no one else, is that the president's address should be before a full house, while as a rule not all the men are able to get in to a nine o'clock meeting; and for

this reason the president's address is now held over, in many societies, to the first of the afternoon sessions. However, the address was put over, and recounted many incidents related to the conduct and organization of the North Dakota State Medical Association; and it will be printed in an early issue of THE JOURNAL-LANCET.

Dr. R. E. Pray, of Valley City, read an especially interesting paper on "Intercostal Neuralgia," in which he commented on recent special research as to its cause. This was followed by the goiter symposium opened by Dr. J. O. Arnson, of Bismarck, who described the early investigations of goiter and its component symptoms, and suggested the necessity of reviewing the literature on the subject and also its early history. He was followed by Dr. L. W. Larson, his associate in Bismarck, who showed many numerous and interesting lantern slides of goiter cases, particularly of the microscopic findings. Dr. Dean Lewis, of Baltimore, Professor of Surgery at Johns Hopkins University, read a very interesting historical paper on the medical, pathological, and surgical aspects of goiter. It was particularly interesting to note that goiter had been recognized many centuries ago, and for many years was called *bronchocele*, so perhaps on the whole there is nothing new or startling in the literature as to the cause, the course, or perhaps the treatment of goiter. The one thing that seems to stand out preeminently, and to be assumed by all participating in the discussion, is that the microscopic evidences of goiter in its different phases have been very much in the foreground and much that is new demonstrated on the subject.

Dr. E. M. Hammes, of St. Paul, Associate Professor of Nervous and Mental Diseases at the University of Minnesota, read a paper on "Neuropsychiatric Disorders and Hyperthyroidism," which seemed to cover the various phases of goiter and incidentally, perhaps, showed where goiter is most prevalent—among the neurotics; that it had very much to do, when associated, with nervous conditions, but not much light had been shed on the subject of relationship between the two. In the afternoon a discussion of the whole subject took place, in which there were many participants. It did not seem to clear the atmosphere strikingly, but was entertaining at least.

Following this, Dr. Frank Burch, Professor of Ophthalmology, University of Minnesota, read a paper on "Ocular Complications of Diabetes." He was followed by Dr. Frank L. Jennings, Associate Medical Director of Glen Lake Sanator-



ium, near Minneapolis, on "The Treatment of Pulmonary Tuberculosis," with the query, "Can it be made more interesting for the man in general medicine?" Dr. H. E. French, Dean of the School of Medicine of the University of North Dakota, gave a "Demonstration of Epiphyseal Lines," a technical paper of great value.

In the evening the annual banquet took place at the Hotel Dacotah, sponsored, in its first half, by Dr. George Williamson, of whom it is said "he is known as the phoenix of the doctors," the story being that he renews his youth at every convention. He was particularly in evidence, and much to the surprise of many of the medical men he brought out what had been developed through his interest, the musical side of Grand Forks among the pupils of the high schools. He furnished an orchestra of young people and introduced one or two soloists who really did remarkably well. Following this, the regular program for the evening was a talk by Dean Lewis on the necessity of a medical education from its broader sense and not from its specialized areas. He believed in the study of gross and general anatomy and in the study of pathology, particularly. He thought that a man who was well grounded in both of these subjects would make a much better practitioner. Dean Lewis always knows what he is talking about. The paper of the evening was by Dr. Wm. Boyd, of Winnipeg, Manitoba, an address on "Lord Lister," a wonderfully inspiring paper in which he depicted the life of Lister and the beginning of the influence of Listerism on surgery. This address will be published as soon as possible and should be read very carefully by all those who are interested in the subject. The editor attempted to follow the Winnipeg essayist but found that he was unable to deliver the set speech which he had not prepared and simply continued the serious remarks which had preceded.

The following day, Thursday, June second, the sessions began as usual at nine o'clock in the morning, introduced by Dr. F. C. Rodda, Associate Professor of Pediatrics at the University of Minnesota, on "The Prevention of Acute Contagious Diseases in Children." This evidently made a good impression, for it was discussed quite vigorously. Dr. W. C. McVicar, of Rochester, read a paper on "The Diagnosis of Gastric and Duodenal Diseases," illustrated, and was followed by Dr. William Carpenter McCarthy, Head of the Department of Pathology and Diagnosis, Mayo Clinic, Rochester, who gave an interesting and lantern-slide talk, the result of a long period of study on the "Clinical and Pathological Sig-

nificance of Gastric and Duodenal Lesions." His slides covered a period of many years and showed very accurately the beginning of the study of these diseases with their pathological findings.

Dr. Wallace H. Cole, Head of the Department of Orthopedic Surgery at the Miller Hospital, St. Paul, and Twin City Shrine Hospital, talked on "Fractures," with a demonstration of the most approved method of treating fractures. In the afternoon Dr. William Boyd read a paper on "The Pathology of the Anemias." He, in turn, was followed by Dr. E. W. Montgomery, Professor of Internal Medicine, University of Manitoba, on "Treatment of the Anemias." So one had a very clear exposition of the conditions and the methods of handling these difficult blood pathologies. Dr. Paul D. Mossman, Surgeon, U. S. A., talked on "Trachoma." The program was brought to a close by the moving pictures of the latest process used in the manufacture of Biologicals, by Dr. E. H. Ehlert, of Minneapolis.

Before the program was finished the new president, Dr. Thomas Mulligan, was introduced and other officials who were there who had been elected for the coming year.

Grand Forks is a wonderful place in which to hold a medical meeting because of the hospitality of the men who live there. They were aided and abetted by other residents of North Dakota. The *Grand Forks Herald*, in referring to an off-stage with the doctors, commented on the whisker adornment and noted the difference between years ago and the present time. Here the editor had the privilege of meeting several of his old friends: Dr. F. L. Witts, of Valley City; Dr. Charles MacLachlan, of New Rockford, a man whom the newspapers say is the Harry Lauder of the Medical Association,—and he can sing a real Scotch song; he has been a regular attendant of the meetings of the Association for thirty-five years. Who has a better record, unless it be Dr. James Grassick, of Grand Forks, who has written a book on medical men of North Dakota, a most entertaining story of the development of medicine in that state. We wish we had space enough to mention many of the other men, among them Dr. J. P. Aylen, of Fargo, and Dr. John Crawford, of New Rockford, both of them jolly good fellows, full of stories, and who still sport a Van Dyke beard. Grand Forks leaves nothing to be desired. Every detail was attended to, every want supplied, and even the weather was perfect. It is safe to assume that the members of the Association had a good time, and they came away well repaid for their attendance. The registration numbered about 170.

The next meeting place of the North Dakota State Medical Association will be at Devils Lake, and Dr. W. F. Sihler, of that city, has been named the President-elect.

The House of Delegates met on two days and succeeded in transacting all of its business in the usual convention style, stressing particularly what medical conventions are doing nowadays, the necessity of attending to the public health, and also discussing medical progress. From the standpoint of the physician they are contributing in the most useful manner to the service which the medical profession renders to humanity. Although there is a vast difference between the conduct in medical methods of past years and those of centuries ago, fundamental principles still remain. "Science has performed wonders in this field and when, as in so many cases, we find the combination of scientific knowledge, technical skill, and the broad human sympathy which we associate with the old-time family doctor of the best type we have something for which we should be profoundly thankful."

## MISCELLANY

### PAYING THE DOCTOR

The city dailies and the country weeklies have never before given as much space, much of it editorial, as to-day to the problem of the relation of the physician to the public. This is well, for the problem is a big one, and, moreover, it must be approached from all angles if it is to be solved satisfactorily to both parties.

The following is a recent editorial which appeared in the *St. Paul News*, a daily that recently has given much attention to medical matters.

In this day of tonsils and adenoids, paying the doctor has become one of the greatest problems in the life of the average salaried man.

The American Medical Association has recognized the burden that the wage-earner has to bear, and its president, Dr. Jabez North Jackson of Kansas City, has just issued an appeal for endowment of hospitals for what he calls the great middle class.

Doctors have three kinds of patients: charity, very rich and those who pay their fees on the installment plan.

The charity patients receive medical attention free, it being considered humanitarian for the medical men to volunteer their services to public and charity institutions.

The wealthy clients pay fees in keeping with their incomes, thus making up to the physician for the time and expense of caring for his free patients.

Those who pay on the installment plan are the wage-earners, too proud to accept free medical at-

tention, who go into debt and pinch themselves to meet the doctor's bills as well as the bills of the hospitals and the nurses.

Being ill is a rich man's luxury or a poor man's paradise, but for the middle man it is a financial calamity.

Hospital fees have become large. The poor man is protected because philanthropists have endowed institutions to provide him with the proper care and attention during illness.

Only the salaried wage-earner has been neglected and he must go to the rich man's hospital, pay the rich man's rates and saddle himself with debt in order to get relief.

Not only this, whenever he pays taxes he is paying for the medical upkeep of the poor, for part of this money is used in keeping up hospitals, clinics and other public health institutions.

Whether you call him a wage-earner or a middle man, he does need help and we are glad to see that the American Medical Association is starting a movement for those who aren't rich or poor enough to afford to get sick.

## NEWS ITEMS

Dr. H. M. Knudtson has moved from Browerville to Norwood, Ohio.

Dr. Edward G. Hutterer, who formerly practiced at Cold Spring, has located in Winsted.

Dr. E. L. Goss, of Carrington, N. D., has volunteered for service in the flood districts of the South.

Dr. Clara McManus, of Gann Valley, S. D., and formerly of Minneapolis, has located at Vermillion, S. D.

The health officers of Minnesota are holding their annual three-day conference in Minneapolis at present.

Dr. Gordan S. Foulds, of the Mayo Clinic, was married on June 1, to Miss Florence Gale, of Toronto, Canada.

Dr. W. W. Murphy has moved from Gilbert to Minneapolis. He is located at 732 Eighth Ave. South, with the Quist Clinic.

Eighty-one student nurses took the examination for registration to work in South Dakota held at Pierre the first of the month.

Dr. Frank I. Putman, formerly of Sioux Falls, S. D., is now associated with Drs. Taylor and Richardson at Ellensburg, Washington.

Dr. H. Longstreet Taylor, of St. Paul, was elected president of the National Tuberculosis Association, which met at Indianapolis last month.



Dr. A. H. Parks, of Minneapolis, will leave for Europe on July 1, for study during the summer. He will be accompanied by Mrs. Parks and daughter Jean.

Dr. E. C. Haagensen, Health Officer of Grand Forks, N. D., was elected president of the North Dakota Health Officers' Association at its annual meeting last month.

Dr. P. E. Wigby, a student in the Medical School of the University of Minnesota, has become assistant to Drs. Browning and Belote in the Caledonia Hospital of Caledonia.

The Out-Patient Department of the Cancer Institute of the University of Minnesota, is open on Mondays and Fridays at 2 p. m. for the examination of patients in that department.

Dr. Walter W. Covell, of St. Peter, has purchased a store building which will be remodeled and used for hospital purposes. It will be a community hospital open to all physicians.

Drs. E. H. Fahey, St. Paul; Howard Weirck, Hibbing; and W. H. Barr, Wells, are the new members of the Minnesota State Board of Health, recently appointed by the Governor.

Dr. W. R. Morrison, of Billings, Mont., has gone to Vienna for a special course in sinus work, which will be given to a group of specialists under the supervision of Dr. George McKenzie, of Philadelphia.

The nurses' training-schools of the northwest, with few exceptions, graduated more nurses this year than in any previous year. The Kahler School of Nursing, of the Mayo Clinic, leads the list with seventy-four graduates.

Dr. John W. Scott, of St. Charles, died last month at the age of 77. Dr. Scott graduated from the Medical Department of the University of Worster, at Cleveland, Ohio, in the class of '80, and came to Minnesota in 1881.

Dr. Charles William Mayo, son of Dr. Charles H. Mayo, of Rochester, and a recent graduate of the Medical School of the University of Pennsylvania, was married last week to Miss Alyse Varney Plank, of Philadelphia.

Dr. H. E. Levin, of Browning, Mont., has arranged to take up practice in Askov (Minn). Dr. Levin, who is a graduate of the Wisconsin Medical College, class of '04, has been engaged in the Government Indian service in Montana for some years.

The fortieth annual meeting of the North Dakota State Medical Association was held in

Grand Forks, N. D., on June 1 and 2. Comments on the meeting are made in our editorial columns. Next year's meeting will be held in Devils Lake.

Dr. J. A. Myers, of Minneapolis, presented a paper before the National Tuberculosis Association at Indianapolis on May 23, one before the Wisconsin Anti-tuberculosis Association at Milwaukee on May 28, and one before the Milwaukee Academy of Medicine on the evening of the same day.

Dr. Louis Dunn, of Minneapolis, has returned from a six months' trip to Phoenix, Arizona, where he went for his health. He has completely recovered and has resumed practice. While in Phoenix Dr. Dunn presented two papers before the Maricopa County Medical Society of that city.

The Minnesota State Board of Medical Examiners now consists of seven members as follows: Dr. L. A. Barney, Duluth; Dr. O. L. Sherman, Luverne; Dr. J. F. Dubois, Sauk Center (new members); Dr. A. E. Comstock, St. Paul; Dr. C. E. Caine, Morris; Dr. E. T. Sanderson, Minneota; and Dr. G. B. Weiser, New Ulm.

Dr. Emma Robbins, House Physician for Women, Northern State Teachers College for South Dakota, has resigned in conformance to a new rule of the Board of Regents which does not permit teaching by persons who are relatives of either the president or a dean of any South Dakota educational institution. Her successor has not been appointed.

Dr. Joseph Howard Smith, of Huron, S. D., died last month at the age of 84. Dr. Smith was a veteran of the Civil War, and took up medicine after the war. He graduated from the General Medical College of Chicago, class of '68, and located in Huron in 1898, going there from Groton. He was a typical old-time country doctor, endeared to a wide circle of patients, and he found his reward in service.

Dr. Mary E. Towers, of Minneapolis, died last week at the age of 70. Dr. Towers was a graduate of the Medical School of the U. of M., class of '98. She had practiced in Minneapolis since her graduation, and for ten years she was on the staff of Asbury Hospital. She was prominent in a number of woman's organizations in the city. She was the wife of Dr. F. E. Towers, who survives her and is a practicing physician in Minneapolis.

The Minnesota State Board of Basic Sciences, from which every person wishing to practice the healing art in Minnesota must obtain a certificate upon examination before taking an examination before the usual Board, is composed of the following members: S. H. Boyer (physician), Duluth; Arthur E. Allen (Osteopath), Minneapolis; R. E. Scammon (anatomist), Minneapolis; L. E. Coss (Chiropractor), Willmar; E. T. Bell (pathologist), Minneapolis. Dr. Boyer is president, and Dr. Bell is secretary, of the Board.

The following officers were elected at the North Dakota State Medical Association meeting for the current year: President-elect, Dr. W. F. Sihler, Devils Lake; first vice-president, Dr. John Crawford, New Rockford; second vice-president, Dr. A. Carr, Minot; treasurer, Dr. W. W. Wood, Jamestown; secretary, Dr. J. G. Lamont, San Haven; delegates, Dr. E. M. Ransom, Minot, Dr. J. R. MacKenzie, Carrington, Dr. P. G. Artz, Jamestown, Dr. Charles MacLachlan, New Rockford; delegate to the A. M. A., Dr. E. A. Pray, Valley City; alternate delegate, Dr. E. L. Goss, Carrington; recommended to the Governor for appointment to the State Board of Health, Dr. J. W. Bowen, Dickinson, Dr. C. E. Stackhouse, Bismarck, Dr. F. L. Wicks, Valley City. Dr. Thomas Mulligan, of Grand Forks, as president-elect last year, becomes president automatically the current year. Editorial comments on the meeting will be found on another page.

#### Northwestern District Medical Society of North Dakota

A regular monthly meeting of the Society was held at St. Joseph's Hospital, in Minot, on May 25, beginning with a dinner at 6:15. Sixteen members were present, and the following program was presented:

"Post-arsphenamine Exfoliative Dermatitis," Dr. M. J. Fardy.

- (1) "X-rays of Gall-Bladder."
- (2) "Treatment of Pernicious Anemia with Liver Diet."
- (3) "Carcinoma of Stomach," Dr. A. L. Cameron.

ANDREW SINAMARK, M.D.  
Secretary

#### Annual Meeting of the North Dakota Academy of Ophthalmology and Oto-Laryngology

The North Dakota Academy of Ophthalmology and Oto-Laryngology met in annual session at the Hotel Frederick, Grand Forks, on May 31, under the presidency of Dr. A. M. Carr, Minot.

The meeting which was largely attended by the specialists of the state included a banquet, scien-

tific program, and the business session. At the scientific session Dr. Frank E. Burch, of St. Paul, presented many interesting case-reports with slide demonstrations. Among those reported and illustrated were the following: Corneal ulcer, conjunctival flap treatment; Replacement of lids by pedicle flap from mastoid and sternocleidoregions; Sarcoma of choroid; Osteoma of ethmoid; Malignant tumor of orbital tissues as a result of metastasis from the liver and adrenals; Embolism or thrombosis of choroidal network accompanying general pathologic conditions.

The officers elected for the ensuing year were as follows: President, Dr. Rolfe Tainter, Fargo; vice-president, Dr. A. T. Bailey, Jamestown; secretary-treasurer, Dr. F. L. Wicks, Valley City; councilors, Dr. John H. Rindlaub, Fargo, Dr. H. B. Beeson, Grand Forks, Dr. A. Carr, Sr., Minot.

Dr. Andrew Sinamark of Minot was elected to membership in the Academy, and the names of several other men of the state were proposed for membership, to be acted upon at a later meeting.

F. L. Wicks, M.D.

Secretary

#### PROGRAM OF THE THIRTY-SECOND ANNUAL MEETING OF THE SIOUX VALLEY MEDICAL ASSOCIATION, SIOUX FALLS, SOUTH DAKOTA

Wednesday, June 29, 1927

##### Morning Session, 10:00 A. M.

1. Transaction of business.
2. Election of officers.
3. President's Address. Dr. William Jepson, Sioux City, Iowa.

##### Afternoon Session, 1:30 P. M.

1. Address—Why and How We Are Nervous And What Shall We Do About It? Dr. Hugh T. Patrick, Emeritus Professor of Neurology, Northwestern University Medical School, Chicago.
2. Address—Pediatrics For the General Practitioner. Dr. Isaac A. Abt, Professor of Pediatrics, Northwestern University Medical School, Chicago.
3. Address—Some Surgical Diseases of the Chest. Dr. Carl A. Hedblom, Professor of Surgery, University of Illinois, Chicago.
4. Address—Practical Considerations and New Developments in the Treatment of Subacute and Selected Cases of Chronic Peptic Ulcer, with notes on the Management of Complications. Dr. A. B. Rivers, Mayo Clinic, Rochester, Minn.
5. Address—History and Symptoms as an Aid in the Diagnosis of Pulmonary Tuberculosis. Dr. S. A. Slater, Superintendent and Medical Director, Southwestern Minnesota Sanitarium.
6. Address—Some Problems in the Pathology and Treatment of Heart Disease. Dr. A. A. Johnson, Council Bluffs Clinic, Council Bluffs, Iowa.

It will be noted from the foregoing that an exceptionally fine program will be presented by recognized leaders in the profession and that it covers



a wide variety of subjects of especial interest to the general practitioner.

Headquarters and all meetings will be held in the Cataract Hotel. Dinner will be served at the conclusion of the program, tickets \$2.00 per plate.

Committee on Arrangements  
DR. G. G. COTTAM, Chairman  
DR. N. J. NESSA  
DR. J. B. GREGG

## PROGRAM OF THE MINNESOTA STATE MEDICAL ASSOCIATION

Fifty-ninth Annual Session

June 30,-July 2, 1927

Duluth, Minnesota

Thursday Afternoon, June 30th

1:45-2:15 P. M.—Medical Clinic. Dr. Hilding Berglund, Professor of Medicine, University of Minnesota, Minneapolis.

2:15-2:40 P. M.—The Parathyroid: Retrospect and Prospect. Dr. A. M. Hanson, Faribault.

2:40-3:30 P. M.

### Symposium on Immunization and Acute Infectious Diseases

Immunization—Diphtheria and Scarlet Fever. Dr. W. P. Larson, Professor of Bacteriology, University of Minnesota, Minneapolis.

Reactions and Observations in 2,000 Immunizations. Dr. D. E. McBroom, Faribault.

Measles. Dr. J. T. Christison, St. Paul.

Pertussis. Dr. E. J. Huenekens, Minneapolis.

Discussion—Dr. I. A. Abt, Professor of Pediatrics, Northwestern Medical School, Chicago, Ill.

3:30-3:45 P. M.—Diagnosis and Treatment of Non-Opaque Foreign Bodies in Bronchi. Dr. K. A. Phelps, Minneapolis.

3:45-4:00 P. M.—Intermission.

4:00-5:00 P. M.

### Symposium on Pulmonary Tuberculosis

Pathogenesis of Tuberculosis. Dr. H. E. Robertson, Rochester.

Immobilization in the Treatment of Pulmonary Tuberculosis. Dr. E. K. Geer, St. Paul.

Surgical Treatment of Pulmonary Tuberculosis. Dr. A. A. Law, Minneapolis.

Discussion—Dr. S. W. Harrington, Rochester; Dr. F. F. Callahan, Pokegama.

Thursday Evening, June 30th

8:00 P. M.

### Medical Economics Meeting

Illinois Lay Education Program. Miss B. C. Keller, Director Lay Education, Chicago.

Minnesota Public Health Education Program. Dr. G. A. Earl, St. Paul.

Medical Economics. Dr. M. L. Harris, Chicago.

Legislation and the Doctor. Dr. H. M. Johnson, Chairman Committee on Public Policy and Legislation, Dawson.

Friday Morning, July 1st

8:00-8:15 A. M.—Calcium Therapy in the Functional Nervous Disorders. Dr. C. C. Gault, Owatonna.

8:15-8:30 A. M.—Non-Penetrating Abdominal Injuries. Dr. W. R. Humphrey, Stillwater.

8:30-8:45 A. M.—Vertigo from an Ophthalmological Standpoint. Dr. C. L. Oppegaard, Crookston.

8:45-9:00 A. M.—Application of Graphic Methods in Medicine. Dr. R. E. Scammon, Ph.D., Professor of Anatomy, University of Minnesota, Minneapolis.

9:00-10:00 A. M.

### Symposium on Gall Bladder and Liver

Physiology of Liver and Gall-Bladder. Dr. F. C. Mann, Rochester.

Present Status of Cholecystography. Dr. B. R. Kirklin, Rochester.

Principles of Surgery of the Gall-Bladder. Dr. Arnold Schwyzer, St. Paul.

Discussion—Dr. J. P. Schneider, Minneapolis; Dr. A. R. Colvin, St. Paul.

10:00-10:30 A. M.—Intermission.

10:30-11:00 A. M.—Non-Operative Treatment of Fractures. (Moving Pictures). Dr. F. D. Dickson and Dr. R. L. Diveley, Kansas City, Mo.

11:00-11:30 A. M.—Radiographic Interpretation. Dr. P. M. Hickey, Professor of Roentgenology, University of Michigan, Ann Arbor, Mich.

11:30-12:00 A. M.—Physiotherapy. Dr. H. E. Mock, Asst. Professor of Surgery, and Dr. John Coulter, Asst. Professor of Physiotherapy, Northwestern Medical School, Chicago, Ill.

### Meeting of House of Delegates

Friday Afternoon, July 1st

1:00-1:30 P. M.—Renal Pathology (Demonstration of Specimens). Dr. B. H. Hager and Dr. E. H. Hargis, Rochester.

1:30-1:50 P. M.—Cancer of the Uterus. Dr. J. C. Litzenberg, Minneapolis.

1:50-2:10 P. M.—The Cervix as a Focus in Chronic Disease. Dr. C. H. Mayo, Rochester.

2:10-3:00 P. M.—Present Trends in Gynecology. Dr. J. O. Polak, Professor of Obstetrics and Gynecology, Long Island College Hospital, Brooklyn, N. Y.

3:00-3:15 P. M.—Intermission.

3:15-5:10 P. M.

### Symposium on Gastro-Intestinal Tract

Physiology of Gastro-Intestinal Tract. Dr. W. C. Alvarez, Rochester.

Control of the Pylorus. Dr. C. B. Wright, Minneapolis.

X-Ray Diagnosis of Disease of the Stomach. Dr. P. M. Hickey, Professor of Roentgenology, University of Michigan, Ann Arbor, Mich.

Gastric Surgery. Dr. D. C. Balfour, Rochester.

Treatment of Chronic Ulcerative Colitis. Dr. J. A. Bagen, Rochester.

**The Annual Banquet****Friday Evening, July 1st**

Toastmaster—Dr. C. H. Mayo, Rochester

6:30 P. M.—Introduction of Guests.

8:00 P. M.—Address of Welcome. Dr. W. A. Coventry, President, Chamber of Commerce, Duluth.

8:05 P. M.—Address. Hon. Theodore Christianson, Governor, State of Minnesota, St. Paul.

8:10 P. M.—The Women's Auxiliary. Mrs. J. T. Christison, President, St. Paul; President-Elect.

8:20 P. M.—State Association. Dr. H. M. Johnson, Past President, Dawson; Dr. W. F. Braasch, President, Rochester; President-Elect.

9:30 P. M.—Dancing.

**Saturday Morning, July 2nd**

8:00-8:15 A. M.—Rectal Fistula in the Tuberculous. Dr. W. A. Fansler, Minneapolis.

8:15-8:30 A. M.—Value of Refraction in Children. Dr. W. H. Fink, Minneapolis.

8:30-9:30 A. M.—Pediatric Clinic. Dr. I. A. Abt, Professor of Pediatrics, Northwestern Medical School, Chicago, Ill.

9:30-9:45 A. M.—Co-operative Management of Gastric Ulcer. Dr. J. B. Carey, Minneapolis.

9:45-10:00 A. M.—Five Years of Hospital Obstetrics. Dr. G. P. Dunne, St. Paul.

10:00-10:15 A. M.—Malarial Treatment of Paresis. Dr. J. C. Michael, Minneapolis.

10:15-10:30 A. M.—The Treatment of Acute Empyema. Dr. J. M. Hayes, Minneapolis.

10:30 A. M.-12:45 P. M.

**Symposium on the Heart**

Bacteriology of Heart Disease. Dr. B. J. Clawsen, Associate Professor of Pathology, University of Minnesota, Minneapolis.

The Heart in Diphtheria and other Infections. Dr. M. H. Nathanson, Minneapolis.

The Hypertension Heart. Dr. G. E. Fahr, Associate Professor of Medicine, University of Minnesota, Minneapolis.

Coronary Disease. Dr. W. S. Middleton, Associate Professor of Clinical Medicine, University of Wisconsin, Madison, Wis.

Heart Disease from the Insurance Standpoint. Dr. C. N. McCloud, St. Paul.

Clinic on Diseases of the Circulatory System. Dr. W. S. Middleton, Madison, Wis.

**Physician Wanted**

In a good town of 500 population in North Dakota, unlimited territory. No competition. A great opportunity. Address Civic Club, St. John, N. D.

**Location Wanted**

By a general practitioner of wide experience. Prefer South Dakota. Want a good live town. Address 362, care of this office.

**Position as Locum Tenens**

Wanted by a graduate of the University of Minnesota now temporarily employed in North Dakota. Address 364, care of this office.

**Practice for Sale**

In South Central Minnesota, town of 900; wealthy German community; hospital facilities. An excellent opportunity. Address 368, care of this office.

**For Sale**

A physician's medicine and instrument cabinet, and an examining table. Write or call Adolph Anderson, 108 Hennepin Ave., Minneapolis, or telephone Main 0359.

**Laboratory and X-Ray Technician Wants Work**

Does high-grade work in either line. Has had five years' experience in large hospitals. Best of references given and moderate salary accepted. Address 359, care of this office.

**Fine Opening for a Physician**

In a good country town in Minnesota. Must speak German and be able to do refraction work. Wanted as partner by a physician who wishes to retire soon. Address 357, care of this office.

**Physician Wants Work**

An experienced physician wants work as an associate, assistant, locum tenens, or practice in an unopposed field. Qualifications and references will give satisfaction. Address 366, care of this office.

**Laboratory Position**

A registered nurse who is also a high-grade laboratory and x-ray technician desires a position in a clinic or hospital. Best of references. Position desired in Twin Cities, or will go outside. Address 367, care of this office.

**Specialist Wanted**

Good Eye, Ear, Nose and Throat man and a Pediatricist can find an exceptional good location with old established physician and surgeon and dentist in a city of 25,000. Rent reasonable. All you earn is yours. Address 358, care of this office.

**Specialist Wanted**

Eye, Ear, Nose, and Throat man and an Internist wanted to become associated with a group of physicians in Minneapolis. Complete X-Ray and Clinical laboratories with expert technician. Patients referred. Office expense on percentage of income. Address 356, care of this office.

**Position as Secretary Wanted**

A young woman of refinement with splendid qualifications and experience in medical work desires secretarial position in a doctor's office or clinic; capable of assuming responsibility. Several years of experience in clinic work, clerical, book-keeping, etc. A-1 references furnished. Address 365, care of this office.

**Hospital for Sale**

Modern hospital partly equipped; 2-story brick building; 5-room apartment for Doctor; waiting-room, office, operating-room; wards for 12 patients; large porches; in a town 65 miles from Minneapolis. Best of country and good opening for local practice. Price \$18,500.

Location and building are ideal for a sanatorium. Address Walstad-Pearson Investment Co., 534 Security Building, Minneapolis.



# THE JOURNAL- LANCET

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## MODERN ASPECTS OF THE DIAGNOSIS AND TREATMENT OF TUBERCULOSIS—PART III—Continued

BY J. ARTHUR MYERS, M.D.

MINNEAPOLIS, MINNESOTA

### XI.—REST

Like many other facts in medicine, man learned from nature that rest is a valuable aid in the treatment of tuberculosis. Hilton, Krause, and others have called attention to the fact that in many parts of the body rest is a response to pain. For example, tuberculous disease of the hip joint usually results in pain early in its course. Because of the pain, the muscles controlling the joint automatically become somewhat rigid and thus partially fix it in the position causing least pain. Then the patient, conscious of pain, spares the joint as much as possible in order to be free from pain. All of this means rest of the joint. Moreover, there develop in many cases spicules of bone, which connect the two bones of the joint and result in complete ankylosis, which of course provides absolute rest. Under such conditions the tuberculous process improves and usually heals.

When a lung becomes involved the muscles of the chest wall become more or less rigid reflexly and the diaphragm on the side of the lesion often lags in an attempt to rest the diseased part. Because of the absence of pain fibers in the lung tissue the patient does not protect and rest the diseased lung as he would a diseased joint unless he should be so fortunate as to develop pleurisy. Because of the absence of pain many patients develop advanced disease

before a physician is consulted. Autopsy and x-ray findings bear sufficient evidence of the fact that thousands of persons have suffered from pulmonary tuberculosis and have recovered with no more rest than that resulting from limitation of movement of the chest wall produced reflexly. Many such persons are never seen by physicians. But there is another group with less resistance in whom rest, brought about reflexly, will not suffice. These for the most part sooner or later come to the physician and for every one of them rest must be a matter of definite prescription by the physician and faithful practice by the patient. In the beginning of the treatment the rest is as near absolute as one can approach. Even when the lesion is small and symptoms slight the patient occupies a bed for a period of at least six weeks, during which time excitement and mental and physical exercise are reduced to a minimum. There are two main objects in this rest period: first, the number of respirations per minute is reduced, thus the lung lesion has a better chance to heal; secondly, the energy of the body is conserved to fight the disease. Besides the period of rest in bed it gives the patient an opportunity to learn the first few of his many lessons, although he may not feel ill. After long and careful observation Brown and Heise say of bed rest: "Surely a much more impressive idea of the seriousness

of the disease and of the necessity of proper care is inoculated, and this should, in later days, months, or years, show beneficial results in prevention of relapse." Six weeks should be the minimum time one with early disease spends in bed. In most cases a much longer period of absolute bed rest is needed, the length of this period being determined by extent of disease and response to treatment.

I have become thoroughly convinced that the period of absolute rest in bed has been far too short in most cases in the past and that longer periods will do much to help restore working capacity and reduce mortality. We usually put patients to bed because of lesion and symptoms and all too often, forgetting the lesion, we let them up because of improvement in or subsidence of symptoms together with lapse of time. In speaking of this subject Stewart says it is "as though a man were locked up and sentenced for murder and slander and let out after he had done time for slander only." If a patient needs absolute bed rest he nearly always needs more than six weeks because, though six weeks may clear up many symptoms, it will do little or nothing with the lesion. It is best to tell patients that symptoms may disappear quickly, but that bed rest is not just for the duration of symptoms but for the duration of the diseased area. Therefore one can never promise a patient, or even predict, how long he will be in bed. We should keep him in bed until physical examination and x-ray plates show as much clearing up of lesions as we think can be accomplished in his particular case. It is a question then of keeping the patient in bed for months and even years if necessary for lesions without symptoms and letting them up and about only when they manifest fair evidence of considerable clearing or maximal clearing of lesions.

In many series of plates we find that clearing up of lesions from plates is common and comparatively rapid on bed routine and very slow and even rare on ambulant routine. The standard, usual, ordinary, essential treatment of tuberculosis is treatment in bed. It is not an introduction to the treatment, but is the treatment; therefore we must regulate treatment, especially rest and exercise, by symptoms when present, but not when absent.

When graduated exercise is begun, of course, the rest must be gradually decreased, but, for many months, and in some cases for years, the patient must spend one or two hours in bed immediately following the noon meal, as well as

at least ten hours in bed each night. This must be carried out with extreme regularity. For example, the patient must spend the same hours in bed each afternoon and retire and arise at the same hours each day. Many people believe that retiring at eight o'clock and arising at six on one day and retiring at twelve o'clock and arising at ten on another is all that is required. This will not suffice in the treatment of tuberculosis. Regularity is essential. In his recent book "Rest and Other Things," Dr. A. K. Krause calls attention to the extreme importance of rest in the treatment of tuberculosis, and the once tuberculous patient must always regard fatigue as his danger signal. He must come to know that he is suffering from a chronic and relapsing disease and that rest must ever be his watchword if he would reduce his chances of relapse. Dr. David A. Stewart says: "While rest, then, is the treatment for tuberculosis, its application is by no means always simple. No two cases are alike, so no two patients need just the same prescription. One man's meat is another man's poison. One can scarcely lift his hand to his head without harm, or have a visitor for five minutes without danger, or even whisper without losing some chance of recovery, and needs to be on 'typhoid rest.' Another can do a day's work, not only without harm, but with positive benefit. In the long gamut of many octaves between these two, what note belongs to any particular patient, just what vibration he will best respond to, is for judgment and experience not inexperience and impulse to determine. The physician who has the experience and judgment to regulate rightly the energy-expenditures of his patients, to prescribe rest and exercise rightly, can treat tuberculosis. Other phases of treatment are almost incidental. If he has not this experience or this judgment, if he does not appreciate what is involved in rest and exercise, he will surely mistreat tuberculosis and with disastrous results.

"A pretty large proportion, then, of all questions about the treatment of tuberculosis can be resolved into this one, how much rest and how to secure it. There have been, of course, pendulum swings of opinion. Ten years ago critics said that sanatorium patients went in men, were over-fed and over-rested, until they came out cabbages. Patterson taught that auto-inoculation stirred up by work helped to cure disease, so organized pick and shovel gangs among the patients at Frimley. But the differences of views are more apparent than real; the truth is that there is the widest diversity among patients.



Patterson's work-cure cases were hand-picked out of large numbers as at a stage suitable for work. And when any of them got into trouble by over-inoculation he was promptly put on a most rigid routine of 'typhoid rest.'

"To-day we have, perhaps, a fuller appreciation of the usefulness of rest, the absolute need of rest, and the dangers of over-exertion in the treatment of tuberculosis than ever before. The infirmary where the patients can be put most completely at rest is the essential part of the sanatorium, and some of us would elect to make the sanatorium all infirmary.

"What a house on fire needs is the fire fighter, not the carpenter. But when the fire has died out, and the house must be repaired and made habitable, the carpenter is the man. At the first stage of tuberculosis rest is the only treatment; at the repair stage, exercise comes in. To keep on the fire-fighting too long is much less dangerous than to quit it too soon.

"The medicine called 'Rest' can be dispensed to patients freely and taken almost *ad libitum* without great harm.

"Everybody who knows anything about tuberculosis knows how symptoms almost melt away, when a rest in bed becomes well established, in cases anything like favorable. Cough gives less and less trouble and finally clears up. Expectoration, as in the well-known advertisement, is first, 'Going!' then 'Going!' then 'Gone!' Temperature drops from fever height to normal. The pulse becomes slow and steady. Weight increases. A look of health comes back. Considering only the outward appearance, one might well suppose that everything had been done, the cure accomplished, and that all is over but the shouting.

"But outward appearances are notoriously deceiving, and nowhere more than among tuberculous people. Inside information is more reliable. The face and frame and figure respond to treatment sooner and easier than the focus of disease, but it is the focus of disease that counts. To be fairly free from symptoms, and look 'better than ever in your life before,' and even to feel about that way, likely means not victory won and the enemy dispersed and disorganized, but only that the preliminary skirmish has gone well, and the main set-to has begun. This is no time for slackness or for change of tactics. Most emphatically it is not the time to weaken on the rest cure, but the time when rest will accomplish most. If three months, or six months, in bed has pretty well cleared up symptoms, the next

three months, or six months, or year, still in bed should do something to clear up diseased tissues. Begin rest to clear up symptoms; continue rest to clear up disease.

"I believe twice as much in rest and in twice as much rest for tuberculous patients as I did ten years ago."

In these cases, therefore, the physician cannot determine the amount of rest necessary. His duty consists of teaching the patient to avoid the sense of fatigue throughout life. When the disease is reasonably well under control one patient may do well on no more rest than he had taken before the development of tuberculosis, whereas another may find it necessary to go to bed as soon as his day's work is done and remain until nearly time to go to work the next day. Moreover, he may find it necessary to remain in bed over each week end. Patients who have suffered from tuberculosis and have made good recoveries come to the physician with questions about rest that may seem insignificant. They are not insignificant, and the physician who fails to take advantage of such opportunities to encourage and support such patients is not truly capable of treating tuberculosis. In writing of our duty as physicians toward such patients Krause says:

"And what under the circumstances is our duty as physicians? It is this: To explain to the patient why relief from strain is so important, to explain, too, that there can be no set formula for all patients, no one even for the individual patient; that rest can be measured only by conscious reaction in the patient; that, therefore, the patient must rely on his own intelligence and behavior in the treatment of his case; and that meanwhile he, the physician, is always at hand, a guide and mentor to help out in the little details of management and to give the patient all the support and comfort that a rich and wide experience can bestow in relieving the tedium of the protracted fight at hand. But, above all, to so engrave rest on the patient's mind that he will automatically and at once respond with rest to the first symptom of fatigue."

There is still another group of patients in whom the rest measures above outlined will not suffice, and for such patients special methods have been devised to bring about more rest of the diseased part. When the idea of localized rest for a diseased lung was young bags of shot and other weights were placed over the chest on the side of the involvement in attempts to aid nature in limiting the excursion of the lung. From this idea evolved the chest splint which in

certain selected cases is considered well worth while. Kinsella, Stewart, and others have devised chest splints of different types, which may now be secured by physicians for their patients.

Postural rest was described rather recently by Webb, Forster, and Gilbert, who reported excellent results in more than 200 cases so treated. The only failures encountered by these authors were in cases too far advanced with bilateral disease, or in patients who failed to carry out the treatment faithfully.

The patient is instructed first to lie on the side of the more diseased lung for a few minutes each day; then the time is gradually increased until the patient lies on this side for at least twenty hours every day. A small hard pillow is usually placed under the ribs. Webb, Foster, and Gilbert state that the lung on the side upon which the patient lies undergoes less movement than the opposite lung during respiration, and its aëration is greatly decreased. The heart becomes displaced toward the recumbent side, the ribs are brought closer together, and when the foot of the bed is slightly elevated the abdominal viscera push the diaphragm upward on this side, and the result is marked diminution of the lung volume. It is obvious that under such conditions the recumbent lung is much less used than the opposite lung.

By this treatment it requires only a few weeks to obtain results which closely simulate those obtained from artificial pneumothorax treatment, that is, subsidence of fever, decrease in pulse rate, loss of cough, greatly diminished expectoration, and decrease of râles. Ordinary pulmonary hemorrhages also respond nicely to postural rest. Webb reports a case in which there had been extensive disease of the left lung with a series of hemorrhages eighteen years ago. At that time the patient was given postural rest, and at the present time this patient is working as a stenographer.

The following quotations from Webb, Forster, and Gilbert, after their extensive study, give one an appreciation of the value of this method of treatment:

"We have had several patients in whom improvement was noted, but resort to pneumothorax was necessary on account of the far advanced condition of the bad lung. In general, however, far fewer patients than formerly have needed treatment by pneumothorax. We are convinced that postural rest in pulmonary tuberculosis carried out with surgical splint thoroughness is the most valuable means we have at hand

for the arrest and cure of this disease."

A recent special method of resting the lungs was presented at the eighteenth annual meeting of the National Tuberculosis Association, May, 1922, by Dr. S. Adolphus Knopf. Dr. Knopf called attention to the fact that he has obtained good results in treating pulmonary tuberculosis of the upper lobes by having the patient lie on the back and employ deep diaphragmatic breathing at the rate of six to eight respirations per minute. He has found that patients may be taught to do this comfortably for several hours a day, and that by so doing the upper lobes of the lungs are given much rest. Other and more drastic methods of producing localized rest will be discussed under surgery of the chest.

In all cases of tuberculosis, therefore, the physician must teach the patient that rest is the most important of all factors. That after long trial of many different factors rest alone has stood the test of time. The physician must teach the patient that rest is always necessary with the approach of the sense of fatigue, and that as to this sense the patient himself must be the judge.

## XII.—MEDICAL AND NURSING SUPERVISION

The tuberculous patient needs a great deal of supervision throughout the course of his disease. If the lesions were visible to his own eyes he would be easily convinced, but being unable to see them he is often led astray by insistent relatives, neighbors, and friends. In order to supervise the care properly the physician must secure the utmost confidence of the patient. In most cases this is easily secured by being honest and frank, yet kind and sympathetic and manifesting capability in the diagnosis and treatment of tuberculosis. The physician who will do these things, in the vast majority of his cases, will become master of the situation.

During the pre-institutional period the patient should be in bed, and this is a period when the great difficulties are encountered. In the beginning of this period the patient's confidence in the physician may not be well established. The patient has just been taken from a life of activity and told that he must stay in bed; he has been told that he has tuberculosis, and because of the belief of many people that tuberculosis is not curable the patient is none too sure of the outcome; he thinks of what will happen to his family. With all of this, his state of mind may be much changed from the usual, and to add to the difficulties nearly every non-medical friend will offer much free advice as to the methods of



treatment. Anticipating all of these difficulties the physician should call at the home after the patient has agreed to take rest treatment. On this visit he finds that many questions have arisen in the patient's mind, and he must take all the time necessary to answer them no matter how trivial they may seem. The physician must remember that not only the future health but the very life of his patient is at stake, and he is one of the guardians of that patient's life. He must imagine himself in the patient's place. On this visit the questions of the suitability of the sick-room as to sunshine, ventilation, etc.; the food; the absolute rest in bed; the visitors; and many other things of importance must be discussed. After this visit the physician should for some time keep in touch with the family by telephone daily. If the family is intelligent and co-operative subsequent home visits should be made on suggestion of the family. Too many uninvited calls lead some families to believe that they are employing a physician with commercial tendencies. Usually one or two calls per week in the beginning with a lengthening of the interval a little later will suffice unless the family especially requests more frequent visits. Of course if the patient is dangerously ill the physician must make frequent calls, but he must always avoid unnecessary visits. The true physician will not destroy the confidence of his patient by rendering a statement which approaches exorbitancy, and if the patient is destitute he will treat him without charge just as willingly and just as carefully as he treats one who possesses great wealth.

If the patient is to go to an institution for a period of treatment the physician should lend every possible aid in securing his admission and should do all he can to build up the patient's confidence in the hospital or sanatorium staff. After the patient has gone to the institution the private physician should continue to manifest interest in the patient but in no way dictate to or interfere with the resident staff. Rather, he should co-operate with the staff and learn from them all he possibly can about the patient's progress. On the other hand the hospital or sanatorium staff must bear in mind that the patient's stay with them is a mere incident in the treatment of his disease and that his physician justly expects to carry on the post-hospital or post-sanatorium treatment. Therefore the staff should do all that is possible to continue and increase the confidence the patient has in his physician and return him to his physician when he is ready for discharge from the institution.

In some ways the post-hospital or post-sanatorium treatment is easier, and in some ways more difficult than the pre-hospital and pre-sanatorium treatment. It is easier because the patient has now followed the routine treatment over a considerable period of time and understands it, consequently he is not so susceptible to suggestions from non-medical friends. It is more difficult because many patients feel that discharge from the hospital or sanatorium means that they are cured. In this respect they liken tuberculosis to certain self-limited diseases, such as pneumonia. The careful supervision of the physician should be continued long after the patient has been discharged from the institution. The physician must never forget that tuberculosis is a relapsing disease and that even years after a patient is apparently cured he may relapse. We see this all too often and not a small percentage of such cases occur among those whose physicians have not kept under close supervision. The frequency with which the physician sees the patient after discharge from the institution will depend upon the stage of the disease and the condition of the patient upon discharge as well as upon subsequent examinations. Some patients should be, and desire to be, seen more than once every month, while others may safely extend the intervals between examinations to three months. As years pass the intervals may be extended to six months and in some cases to a year. The physician must equip himself with an adequate knowledge of the modern, general and special methods of treating tuberculosis and apply them in all cases as indicated. Here, just as with the pre-institutional treatment, the physician must adjust his fees so as never to make the patient feel that periodic examinations embarrass him financially. A great wave of enthusiasm has recently spread over the medical profession regarding the periodic health examination. Physicians in tuberculosis work have practiced periodic examinations for many years and recommend it strongly, not only in definitely tuberculous cases, but also as one of the greatest preventive measures that has ever been introduced into medical practice.

Throughout the whole course of the patient's disease the care of the nurse is indispensable. If a well-trained private-duty nurse can be provided the patient's chances of recovery often are greatly increased. If not the public-health and the visiting nurse is capable of rendering invaluable service during the pre-institutional and post-institutional periods. These nurses make

frequent visits to the homes where they console, encourage, and help the patients wage their battles against tuberculosis.

Medical and nursing supervision should also include the proper education of the patient as regards tuberculosis, for certainly it is the physician and the nurse who are best qualified to offer instruction. It is appalling how little most people know about their bodies and the diseases which attack and destroy them. It is obvious that the more a patient learns about his body and the disease from which he is suffering, the better able he is to fight his disease. The physician and the nurse in tuberculosis work have no greater responsibility than that of educating the patient and his attendants regarding health. Indeed, public-health education is one of the chief duties of every practicing physician. He should ever be seeking opportunities to educate people as to how to prevent disability, suffering, and death from disease. No greater opportunity ever presents itself to do this kind of educational work than during the days and weeks which follow the rendering of a diagnosis of tuberculosis. The patient who, perhaps, had never been sufficiently interested even to listen to a discussion of this disease, now finds nothing more satisfying than a long health talk by his physician during which he is permitted to interrupt with frequent questions. In many instances patients voluntarily jot down all the questions that arise in their minds between the physician's visits. Not infrequently the proper elaboration of the points a patient wishes to be enlightened upon will require more than an hour of the physician's time. This is time well spent, for it is not only educational work of the highest type, but it also serves as a real stimulus to the patient in his treatment.

In addition to the personal health instruction which the physician gives, he should make available to the patient a list of books on tuberculosis written by widely and favorably known authors. Every patient should read or have read to him such books as "An Autobiography," by E. L. Trudeau; "The Battle with Tuberculosis and How to Win It," by D. MacDougall King; *Rules for Recovery from Pulmonary Tuberculosis*, by Lawrason Brown; "T. B., or Playing the Lone Game,—Consumption," by T. C. Galbreath; "Tuberculosis and How to Combat It," by F. M. Pottenger; "Lessons on Tuberculosis and Consumption for the Household," by C. E. Atkinson; "Tuberculosis, A Primer and Philosophy," by McDugald McLean; "Rest and Other Things,"

by A. K. Krause. These books contain a great deal of information for the patient, and they are written in such different styles and from such different view points as to make the reading of all of them highly desirable.

### XIII.—EXERCISE

It is not long since patients with active tuberculosis were advised to take much exercise. Indeed, Brehmer prescribed long walks for his sanatorium patients, and even to-day one occasionally sees a patient with active disease who is walking several miles before breakfast and devoting much of the remainder of the day to physical activities requiring great expenditure of energy. To-day we know that exercise in the treatment of tuberculosis should be carefully prescribed. The physician must, therefore, make a careful study of the indications and contra-indications for exercise. The tuberculous patient is now advised to reduce his physical and mental activities to a minimum by remaining in bed until all signs of clinical activity have disappeared and often many months longer. By so doing the energy needed in the healing of the tuberculous process is conserved. If he is making a satisfactory recovery, however, there comes a time when he will be benefited by exercise. The physician's aim should be not only to bring the disease under control but also to return the patient to a good working and earning capacity at the earliest time compatible with safety. The beginning of this period of restoration is very important and should be undertaken with the greatest possible care and with the patient under the very close observation of the physician. Dr. David A. Stewart says: "Exercise has also its place and its time. It restores function, gets muscles into condition, keeps down fat, breaks the monotony of the rest routine, and actually helps toward the happy result called, by the patient, at any rate, cure. It has its time and its place, but woe to him who gives it the wrong time and the wrong place. The medicine called 'Exercise' must be prescribed in exact doses and marked with a 'Poison' label, for too large doses will certainly poison and may even kill." Dr. Lawrason Brown has said: "There is no danger as great as is inherent in exercise." Again he says: "Exercise should be regarded as a powerful and dangerous medicine, to be used carelessly never, with impunity by none, and as a deadly drug by all."

Exercise should usually not be begun for at least a month after all clinical symptoms have



disappeared—and most experienced clinicians would be afraid to suggest so short a period as a month. Then the patient may be allowed one bathroom privilege per day. If all goes well for a week or ten days two bathroom privileges per day may be permitted. If no symptoms have appeared at the end of another week or ten days the patient may be allowed to sit at the table (if the dining room is on the same floor) for one meal per day. If no untoward symptoms develop in ten days or two weeks the patient may sit at the table for two meals, and after another similar symptom-free period three meals per day may be permitted. If all is well the patient is now ready to begin graduated exercise, preferably in the form of walking. It is well to remember that such times are not applicable by any means to all cases and that all such programs are to be controlled by the clearing up of the lesion as shown in physical and x-ray signs.

During the time between the disappearance of symptoms and the beginning of graduated exercise occupations such as knitting, basket-making, and bead work, which can be done while the patient is sitting or is in a semireclining position in bed, may be prescribed. Such occupational therapy helps to keep the patient in right mental attitude and so has often proved of tremendous service, but the kind of work done, as well as the amount of time spent at this work each day, must always be prescribed by the physician. In many hospitals and sanatoriums occupational therapy departments exist and in some cities there are persons capable of supervising occupational therapy in patients' homes as it is prescribed by physicians. About the best and safest as well as the most useful of occupations is regular school studies in varying amounts. The time of treatment for the tuberculous may be made a time for a few of the useful studies for which the patient has never before found time.

When graduated exercise is begun, on the first day at about ten o'clock the patient walks slowly from the house for two and one-half minutes by the watch and then turns and walks slowly back to the house. This five minutes exercise is taken every morning for a week, and, if no symptoms of activity appear, a similar walk for five minutes is permitted in the afternoon at about four o'clock. The exercise is very gradually increased until the patient is walking three or four hours a day. Light work may then be undertaken for an hour or so a day, and the time gradually increased until the patient has reasonably good working capacity. Again it must be

stated that such gradations as are suggested are suggested with fear and trembling as no suggestions can apply to all cases. To err on the side of rest is safe.

If the patient develops any symptoms suggestive of reactivation of the tuberculous process at any time during the period graduated exercise is being prescribed, all exercise should be discontinued and he should be placed on bed rest again. If the symptoms prove to be due to reactivation of the tuberculous process the treatment should be carried out in precisely the same manner as during the initial attack and exercise reinstituted in the same manner as above described. In doubtful cases it is well to begin with five minutes every other day. In such cases increase in exercise has to be prescribed with the greatest care. The physician must not become discouraged as several unsuccessful attempts may be made before the patient's working capacity is completely restored. An experienced physician usually will see the trend of the case and anticipate trouble by an early return to rest.

Some patients are fortunate enough to have occupations to which they may hope to return without hazard. As they slowly undertake work it may be made similar to, or quite the same as, their previous occupations. Greater difficulty is encountered, however, when the patient's previous occupation is a hazardous one. Such patients may find it necessary to prepare themselves for entirely new vocations, and some training for these may be undertaken when they are ready for light work, but always under close medical supervision. Clerical work has been found very satisfactory for patients recovering from tuberculosis since it requires a small daily expenditure of physical energy and its hours are comparatively short—not more than eight in twenty-four. It is obvious, therefore, that this leaves the patient free about two-thirds of each day, and that there is much truth in the old idea that it does not make so much difference what the patient does during working hours as what he does during the remainder of each day.

Here again it must be repeated that the very approach of the sense of fatigue must always be regarded as a danger signal. If each tuberculous man could understand this and stop instantly with the first indication of the sense of fatigue and take sufficient rest he would greatly extend his years of life and usefulness. The physician should act as advisor for years after the disease is apparently healed. Indeed, from the very beginning of the disease and on through the pa-

tient's life the physician will be called upon for many important decisions. In every case and at every time of decision the physician must keep in mind not the immediate feelings of the patient and his probable disappointment but his ultimate welfare. If the patient is eager to undertake some activity which the physician believes would jeopardize his health he must take a firm stand against it. The disappointment and even anger of this day will be forgotten in time and in its place will appear a confidence which nothing can disturb. The physician must stead-

fastly "sit on the lid." Many patients will undertake far too many activities against advice, but as failure begins to loom in the distance they often begin to see the error of their ways and develop ever increasing confidence in the physician. The physician who takes a firm stand always recommending that which seems to be safest for the patient will not only gain and retain his confidence but will help in greatly extending the years of life and usefulness of those who seek his services.

## THE VALUE AND METHOD OF ADMINISTERING WATER IN ACUTE INFECTIONS\*

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Water, which comprises about 70 per cent of the total weight of the organism and is present in every tissue, is the universal solvent in the body. All of the various processes of secretion, excretion, transudation, and nutrition depend on its presence. Without water life is terminated far earlier than without food. Many unfavorable manifestations accompanying infections and intoxications are attributable to fluid deficit. Water is the most vital element entering into the composition of the organism.

In urging the importance of fluids in the treatment of infections and shock, Crile<sup>1</sup> points out the fallacy of thinking of water merely as an agent which raises and sustains blood pressure. Water has certain properties which are vital to the organism. It has a greater specific heat than any other substance; it has the greatest solvent power; it has the greatest power as a catalyst; it is the only medium in which colloidal systems can be established; and finally water itself is a great chemical activator. Crile<sup>1</sup> believes that patients suffering from shock or infections should receive plenty of water, that this treatment should be started early, and that the water should be administered in the interest of internal respiration and metabolism. In the treatment of acute abdominal conditions Crile<sup>2</sup> is opposed to immediate operation, but advocates, along with other measures, the infusion of large quantities of water by hypodermoclysis, deferring surgical intervention until such time as the patient's condition warrants it. Unless the patient's status is moribund, the operative risk

will be greatly lessened by this treatment.

Water, because of its high specific heat, is capable of absorbing large quantities of heat, thus preventing sudden temperature rises in the cells. Furthermore, water distributes the heat throughout the body and carries the excess to the surface for elimination. Balcar, Sansum, and Woodyatt,<sup>3</sup> on the basis of experiments on dogs in which they produced dehydration by means of the intravenous injection of glucose, offered the suggestion that the symptoms of fever in all ordinary febrile diseases may mean a deficit of "free" water in the body. These investigators administered water, in quantities of eight liters or less, to three patients with pneumonia, in all of whom the temperature returned to normal within twenty-four hours.

### INDICATIONS FOR THE ADMINISTRATION OF WATER

The aims in the administration of water in the treatment of acute infections are (1) to relieve the dehydration of the tissues, (2) to dissolve toxins and carry them off through the emunctories, and (3) to overcome shock by restoring the volume of blood. As to election of procedure, hypodermoclysis is my method of choice, for reasons hereinafter stated. The principal indications for this form of therapeusis are (1) hemorrhage, (2) general peritonitis, and (3) acute general infections, especially pneumonia, typhoid fever, and erysipelas. I have likewise observed good results from hypodermoclysis in the dysenteries. In typhoid fever, with or without hemorrhages, the administration of 500 c.c. of normal-salt solution under the skin has yielded such gratifying results as to deserve consideration as a life-saving measure. In pneumonia,

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when the patient cannot drink sufficient fluid to keep the tongue moist and clean, it is my practice to use the same treatment.

While the discussion is primarily concerned with the use of hypodermoclysis in acute infectious diseases, this procedure has a much wider range of usefulness. It is of great value in all toxemias and states associated with tissue dehydration, such as in diabetic coma and other acidotic states, and as in uremia.

As a pre-operative measure it has been my custom to administer, by mouth, one glass of spring water or of any soft water per hour for twenty-four to thirty-six hours in an effort to have the patient take about one gallon of water during this period. This preparation has proved of value for the following reasons: (1) It combats shock; (2) it diminishes pain, tympanites, emesis, thirst and hunger; (3) patients who have been saturated with water do not suffer for the want of fluids or food, at least for the first week following an operation; they can be kept comfortable if given 500 to 1,000 c.c. of water twice daily.

#### METHODS OF ADMINISTRATION

The mouth offers the readiest avenue for the administration of water, but frequently this means cannot be used. In severe infections, and especially in peritonitis, the normal routes of absorption are considerably deranged, and it becomes necessary to administer water through other channels. Three routes are then at our disposal; namely, the rectal, the subcutaneous, and the intravenous.

Although proctoclysis by means of the Murphy drip is the simplest method, it is subject to certain definite disadvantages: It has been my experience in cases of general peritonitis that it is practically impossible by this procedure to introduce fluids in sufficient amount in a reasonable length of time; it requires much longer to introduce a given amount of fluid than by hypodermoclysis; and, in well-advanced cases of generalized peritonitis, very little of the liquid is retained. The rate of absorption following proctoclysis is always uncertain and variable. The frequency with which nurses report that the fluid injected by the Murphy drip has not been retained does not commend the choice of proctoclysis when the patient is in urgent need of water.

The intravenous administration of water is of limited application. The sudden introduction of a large quantity of fluid entails a cardiovascular hazard.

The ideal to be attained in the administration of water in acute infectious diseases is gradual and continuous absorption in amounts which can be definitely ascertained and controlled. Hypodermoclysis fulfils these specifications. While this method requires an aseptic technic and entails more work than proctoclysis the certainty with which fluids are introduced should lead to its employment whenever possible. With a proper technic, large quantities of fluids can be introduced under the skin without causing pain.

#### TECHNIC OF HYPODERMOCLYSIS

*Apparatus.*—The receptacle consists of a bottle graduated to 1,000 c.c., which is suspended on a support three or four feet above the patient. Its outlet is connected with half-inch rubber tubing, which is divided close to the bottle for the insertion of a visible dropper. When it is desired to use both axillæ or flanks simultaneously for hypodermoclysis, a Y-shaped connection is utilized. The rate of flow is controlled by a screw clamp on the proximal segment of the rubber tubing. The extremity of the tubing is attached to a hypodermic needle about three inches long, preferably a No. 20 (bore about 1/32 inch). The entire paraphernalia may be bundled up for future use and sterilized in the autoclave, or it may be sterilized immediately before use by boiling.

To introduce fluid rapidly, the following device may be employed to force the liquid from the bottle: Into a 1,000 c.c. graduated bottle is inserted a rubber cork perforated for the passage of two right-angle glass tubes. One of these glass tubes is connected with the rubber tubing passing to the patient; to the other glass tube is attached a rubber bulb with a short strip of rubber tubing.

As to the choice of the fluid to be injected, sterile freshly distilled water seems to be the most desirable under all ordinary circumstances, as pointed out by Bartlett.<sup>4</sup> Comparing water and salt solution introduced at the same time in the two axillæ of the same individual, it was found that water was absorbed more rapidly than saline. Furthermore, it would appear from a theoretical viewpoint that the introduction of sodium chlorid solution in large amounts might possibly lead to an undesirable salt concentration in the body. In the light of the experiments of Balcar, Sansum, and Woodyatt,<sup>3</sup> it would appear that the demand of the organism suffering from an acute infection is for "free" water rather than for water which is holding salt,

sugar, or other substances in solution; however, when it is necessary to supply nutrition or combat acidosis, glucose may be added in a concentration of 3 per cent. Personally, I have used saline solution in large amounts by hypodermoclysis and I have never observed any unfavorable effects resulting from its employment.

Hypodermoclysis can be made entirely painless by the addition of very dilute novocain to the water for injection. Bartlett<sup>4</sup> has shown that a concentration of 1/16 of 1 per cent of novocain produces adequate anesthesia for the introduction of fluid under the skin. In his experience a continuous inflow of 1/16 of 1 per cent of novocain can be maintained with most patients, as long as indicated, without causing discomfort or toxic symptoms. Hypodermoclysis is not a painful operation and does not ordinarily require continuous anesthesia. When morphine, adrenalin, or other drugs are indicated their addition to the solution forms a convenient method of administration.

*Procedure.*—The area above or below the breasts is the region most commonly chosen for hypodermoclysis. I prefer the former site or the axilla to the lower mammary region. Bartlett<sup>4</sup> considers the flank midway between the lower ribs and the prominent upper curve of the ilium to be the site of election since less subsequent damage has occurred here than elsewhere. The pectoral region and the lower abdomen may also be selected.

Strict asepsis is essential. Using a fine hypodermic needle, the skin at the site of injection is anesthetized with a 1 per cent procain solution, and then a few drops of this solution are forced along the contemplated course of the larger needle through the deeper tissues. The No. 20 needle is passed through a three-inch square of sterile gauze, four to eight ply thick, which serves as a shield to protect the needle from contamination by the hand. It is then inserted along the anesthetized course into the subcutaneous tissue. When the needle is in place, the flange is wrapped in gauze so as not to cause pressure, and the needle is fixed in position with very narrow strips of adhesive plaster passed over the gauze.

The water for injection is heated to 110°F. and poured into the bottle, which has been heated to the same temperature. The rate of flow, which should usually be from 80 to 160 drops a minute, is regulated by means of the screw clamp on the rubber tubing. When continuous hypodermoclysis is employed over a considerable

interval, the fluid may be kept warm by frequently refilling the container or by the use of a sterile hot water bottle placed within the receptacle.

The solution should not be allowed to distend the tissues nor to cause pain. When this occurs, the flow should be temporarily discontinued by means of the clamp, leaving the needle in place. It is necessary to watch the patient to guard against overloading the circulation or the onset of pulmonary edema. With a failing heart there may be a tendency to water-logging of the tissues. With intelligent supervision, however, hypodermoclysis is practically free from danger.

Kanavel<sup>5</sup> has employed continuous hypodermoclysis over periods of three to four days without discomfort or ill consequences to the patient. In his experience, greater benefit has been derived from continuous hypodermoclysis combined with continual gastric lavage in the treatment of peritonitis than from any other procedure.

#### CONCLUSIONS

1. The administration of water is a valuable therapeutic procedure in acute infectious diseases, in hemorrhage and shock, and in intoxications and morbid states accompanied by tissue dehydration.

2. Hypodermoclysis offers the most satisfactory and dependable method of administering water in acute infectious diseases. It is far superior to proctoclysis, because (a) a sufficient quantity of fluid can be introduced within a short interval, (b) the dosage can be controlled, and (c) the fluid is certain to be absorbed.

3. With proper technic, hypodermoclysis is thoroughly safe and painless. Water may be continuously administered by this means over periods as long as three or four days.

4. Sterile freshly distilled water would appear to be the best liquid for injection. Saline solution may be used, and, where it is necessary to supply nutrition or combat acidosis, a 3 per cent glucose solution if available. The addition of 1/16 of 1 per cent novocain to the water for injection is safe and renders the procedure entirely painless. Various drugs, such as morphine and adrenalin, may be administered by adding them to the hypodermoclysis solution.

5. In certain cases of typhoid fever, pneumonia and erysipelas, my experience with hypodermoclysis has been so satisfactory that I am led to believe that this form of therapeutics deserves to be ranked as a life-saving procedure.



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## DISCUSSION

DR. THEODOR BRATRUD (Warren, Minn.): The introduction of methods for combating dehydration is probably the most important advance in medicine in the last twenty years, and Crile has been one of the pioneers in this work.

As Dr. O'Connor has indicated, whenever we find a moist tongue we know that the patient is not suffering from lack of water. We are all familiar with the fact that in the acute infections or in any physiological upset the gastro-intestinal tract is put out of commission, and food may act as a ptomain because it is not absorbed. In those cases water will help to flush out the system.

The essayist spoke of giving hypodermoclysis in cases of hemorrhage. I believe that in some cases exception might be taken to the use of this measure while the patient is bleeding. We should not employ hypodermoclysis until the hemorrhage has been checked. However, it is well to start hypodermoclysis if one has an idea where the hemorrhage is coming from and is prepared to get at the source of the hemorrhage.

Dr. O'Connor mentioned the use of distilled water. For the last few years we have given up saline solution altogether, even using tap-water for intravenous injection. We find that many patients will tolerate a pint of water given by rectum much better than they will tolerate the Murphy drip, also we find that tap-water is absorbed more readily and quicker than the saline solution. The same holds good for water given by hypodermoclysis. According to the laws of osmosis and considering the amount of saline already in the blood, it is but natural that water without the salt will absorb more quickly than water with salt. In addition to this we must consider that in many acute infections we have a nephritis, when additional salt in the system tends to aggravate the condition.

We talked the matter of giving glucose over with Crile two years ago and he said that they no longer used it. We do not see that it makes any difference whether one uses glucose in these acute infections or not; the main thing is to get water into the circulation.

We have found in many cases that when hypodermoclysis is used the water is not absorbed. In such cases we do not hesitate to run it in the veins very slowly by using an ordinary hypodermic needle.

We see many fancy instruments devised for the purpose of maintaining a certain temperature of the water. I do not think it makes any difference whether the water is introduced at room temperature or at body temperature.

DR. KARL W. DODGE (Marshfield, Wis.): The use of water is so common in surgical and medical prac-

tice, that we have sometimes wondered whether there may not be instances wherein the use of a great quantity of water following operation or as a part of the therapy in medical cases might not be harmful. I wish to state that I agree with the essayist concerning the use of large quantities of fluid by hypodermoclysis or per rectum or intravenously in all those cases where there is evidence of dehydration. However, it is conceivable that in certain instances the introduction of a large quantity of fluid may overtax an already damaged myocardium or kidney parenchyma. Also in arterial hypertension the possibility of untoward results from the too rapid increase in body fluids must be borne in mind.

DR. JOHN H. RISHMILLER (Minneapolis, Minn.): The cycle in the practice of medicine is interesting. When I was an interne in the German Hospital (now Lennox Hill), New York City, the instructions were absolutely not to give any water by mouth, per rectum, or in any other manner. The word hypodermoclysis at that time had not been coined. I remember distinctly one gynecological case on whom hysterectomy for fibroma of the uterus had been performed by Dr. Florian Krug. She was on the verge of dying, and the attendant had given her up. Naturally, the nurses and internes said that it was too bad that she was in such tremendous shock and had no chance for recovery. I visited her about eleven o'clock at night and said, "How do you feel?" "A little better" was the reply. This patient was in a two-bed room and the other patient who was well under way towards recovery said, "That woman has opened her water-bag and drank the whole quart of water." I was horrified, and my thought was that now she was surely going to die. The next morning we were surprised to find that she was very much alive, and eventually she made a satisfactory recovery.

After leaving my internship at the German Hospital I served my internship at the Woman's Hospital in the State of New York. Before I left that service the cycle of change had brought about the inauguration of first flushing and then of filling the abdomen with normal-salt solution and closing the abdomen with as much salt solution in the peritoneal cavity as could be easily enclosed.

Later the profession enthusiastically took up the Fowler position (an inclined position obtained by raising the head of the bed from two to two and one-half feet in order to ensure better drainage after abdominal operation). The Murphy drip method is the last phase of the cycle in all our questionable cases where we desire to take care of, first, possible peritoneal infection, second, by filling the vascular system with fluids to combat operative shock to a large degree, and third, to stave off acetonuria and acidosis. So it is interesting to recall the different cycles through which the profession has passed in the post-operative care of patients who have undergone a major laparotomy.

DR. DAVID J. TWOHIG (Fond du Lac, Wis.) It occurs to me that one means of administering fluid which has not been mentioned here, and especially in medical conditions, is by the use of a duodenal tube. In cases of acidosis, diabetes, and a number of other medical conditions the ideal method of giving water, normal-salt solution, or other fluid, is through the duodenal tube. I have used that

method of administering fluid in a number of cases of eclampsia, giving plain tap-water, with very gratifying results.

DR. ARTHUR A. LAW (Minneapolis, Minn.): In special cases of common-duct surgery in which it is necessary to administer fluid, Dr. L. L. McArthur devised the method of introducing into the stub of

the cystic duct or through the common duct a small tube extending into the duodenum and giving the Murphy drip through that. It is the same principle as the method mentioned by Dr. Twohig, but in cases of a specific type of disease Dr. McArthur found it of great value when dehydration was present.

## PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

Meeting of April 13, 1927

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, April 13, 1927, at 8 P. M. Dinner was served at 7 P. M.

The meeting was called to order by the President, Dr. F. E. Burch. There were forty-three members and one visitor present.

The minutes of the March meeting were read and approved.

Dr. L. A. Nippert and Dr. H. L. Staples were elected to Honorary Membership in the Academy. Dr. C. B. Wright was elected to Active Membership from Minneapolis, Dr. C. E. Conner to Active Membership from St. Paul.

Dr. George Douglas Head read the following memorial of the life of Dr. A. W. Abbott, a member and past president of the Academy, and a motion was carried that it be made a part of the permanent records of the Academy of Medicine:

Amos Wilson Abbott has passed on. He was one of the founders of the Minnesota Academy of Medicine and a pioneer surgeon of this state. Most men relinquish their scientific activities as advanced age creeps upon them. This was not so with Dr. Abbott. His presence in these later years at the meetings of the Academy and his participation in the discussions forcibly indicate how brightly the fires of professional interest and enthusiasm burned in his heart. It falls to the lot of but few medical men to have left behind them so honorable and useful a life history. The high quality of his scientific attainments, the lofty purpose which characterized his career, and the purity of his life have endeared him to every member of the Academy. It is most fitting to present to the Academy and place on our records some of the important facts of his life.

Amos Wilson Abbott was born of missionary parents in Ahmednuggar, India, on January 6, 1844. When he was one year of age, he, with his native Christianized Indian nurse, was kidnapped. The natives were about to kill him when the nurse reminded them that according to an Indian superstition something dire would happen to them if they killed him before sundown. They decided to wait, and the nurse stole away with him, carrying him to his parents.

He came with his parents to the United States when he was four years old and lived in Wilton, N. H.

When he was seven his parents went back to India, leaving him with an aunt who was of the old New England type, very religious and unrelenting. One day when he was twelve years old his aunt accused him of breaking a window; when he denied having done so she doubted his word, whereupon he left her home, shifting for himself from that time on. He attended Phillips Andover Preparatory School, working his way. At fifteen he entered Dartmouth College. He had been there two years when the Civil War broke out, and he enlisted as a drummer boy. He was taken prisoner and confined in Libby Prison. He escaped from there with six companions but barely missed being shot in the break for freedom. The night Lincoln was assassinated, he was in the lobby of the theater to see the President enter. He saw Booth on horseback as he escaped. After the war he earned by his own effort the money to finish his education.

Dr. Abbott received his medical education at the College of Physicians and Surgeons, New York City. He entered practice first at Delhi, N. Y., but came to Minneapolis in 1877.

In 1880 he was married to Helen Wright, of Delhi, N. Y., who with a son and two daughters survive him.

On March 5, 1902, Dr. Abbott opened the Abbott Hospital in the old double house at 10-12 East Seventeenth Street, Minneapolis. Here he continued his surgical work until 1910, when the present Dunwoody building was erected for him by Mr. Dunwoody, a life-long friend, as a token of gratitude for the operative relief given Mrs. Dunwoody. In 1914, at Mr. Dunwoody's death and at Dr. Abbott's suggestion, the Abbott Hospital was given to Westminster Presbyterian Church of Minneapolis together with the Dunwoody endowment of \$100,000.

Dr. Abbott has since been the chief of staff of Abbott Hospital. He has given much of his time and strength in building up this institution which, with the gifts of Mr. T. B. Janney and Mr. O. C. Wyman, ranks among the strong hospital organizations of Minneapolis.

Dr. Abbott early in his career showed interest in medical education and taught anatomy in the St. Paul Medical College. In 1881 he assisted in founding the Minnesota College Hospital, where he was professor of anatomy and later served as professor of gynecology. He later became associated in the same capacity with the medical school of the University of Minnesota, where he taught for years, and held an emeritus professorship there at the time of his death.



In conjunction with Dr. J. Clarke Stewart and Dr. F. F. Wesbrook, he founded the Minnesota Pathological Society. He was honored by various medical organizations, having served as president of the Hennepin County Medical Society in 1900-1901; the Minnesota State Medical Society in 1893; the Academy of Medicine in 1888-1889; the Minnesota Pathological Society in 1913-1914; and the Western Surgical Association in 1911. He was a member of the American Medical Association and of the American College of Surgeons.

Early in his professional career he became a contributor to medical literature out of the richness of his experience and his scientific observations. The first publication of which I find record was a paper upon "Antipyrin" published in the *Northwestern Lancet* in 1885. Then followed year by year a long bibliographic list of observations, case reports, public addresses, and medical society papers which will be published elsewhere. These titles cover a wide range of subjects. Some of these contributions to medical literature are especially noteworthy and were real additions to medical knowledge. Among these should be mentioned his paper read before the Western Surgical Association in December, 1915, upon "The Early Diagnosis of Intussusception in Children under Three Years of Age" which made a profound impression and is considered a classic in the clinical description of this condition. His last paper published in *Minnesota Medicine*, in 1923, was entitled "Surgery in a Past Generation."

This closes the chapter of his life achievements. It is a fine record.

The members of this Academy will miss this modest man with his honest frank manner, his quiet dignity, his hatred of sham or deceit. In his death the profession of medicine has lost a truly great member.

The Committee: ARCHA E. WILCOX  
ARTHUR T. MANN  
GEO. DOUGLAS HEAD, Chairman

The scientific program of the evening was as follows:

Dr. Emil S. Geist (Minneapolis) read a paper on "Fracture of the Hip." Numerous charts were shown.

#### DISCUSSION

DR. A. T. MANN (Minneapolis): It seems to me that the supposition that the synovial fluid prevents union in these fractures is purely a theoretical assumption and is not proven. The examples which are given to support the contention that synovial fluid prevents union can be explained on some other ground, and that is circulation.

When the upper head of the radius is split into fragments and separated from the shaft, these fragments are entirely without a blood supply. They then become autografts and for union must be firmly fixed to the living ends of the bone; otherwise they will degenerate. I have found that out in a series of experiments on dogs to determine the behavior of autografts in the knee-joint. I have taken out one condyle of the femur in each knee and held it in my hand and then replaced it; that is, it becomes a true autograft. These I fastened into place sometimes with furniture nails and some-

times with screws. Most of them were fastened firmly; and a few were fastened less firmly to determine their behavior. Those firmly fastened always lived and united into place; when loosely fastened, union failed and the graft degenerated. For the same reason this would be true of the fracture of the upper head of the radius, with the fragments separated from their blood supply, and of the small bone in the wrist. Unless fairly firmly fixed into place, they follow the law of non-union and absorption.

We have fractures of the patella which are bathed with synovial fluid. The rule under the old method of treatment is that there is never bony union. With the new treatment of opening the joint and fastening the fragments firmly there is practically always union.

I want to commend the use of the carpenter's mallet to produce firm impaction. The principle is the same, that when the part which has no circulation is firmly fixed, it should follow the law of autografts and unite. With the Whitman technic one does not always get them into close position because of the small, jagged irregularities which tend to hold the greater portions of fragment surfaces away from each other. But, with the impaction with the carpenter's mallet as Cotton uses it (which is a big wooden mallet), and he gives it a swinging stroke and a through stroke until he feels something yield, the fragments are forced into broad contact. If they are held firmly they should follow the law of autografts, or better, and become united.

DR. J. F. CORBETT (Minneapolis): Something occurred in a case I had a while ago which indicated that health is not always a case of contact. The case I refer to is that of an old lady who had an impacted fracture of the femur. This had been treated for some months and the fragments were still in apposition when I first saw the case, but in the course of time, in spite of the fact that she kept off her feet, absorption of the bone occurred, there was non-union and a slipping of the fragments occurred. It seems that could not be from lack of contact because we had good contact. There is something else that enters in, either disturbance of circulation or synovial fluid as has been suggested.

DR. A. R. COLVIN (St. Paul): Dr. Geist has read a paper on a very important subject.

I think it is pretty generally conceded now that union is to be expected even in the subcapital fractures of the neck, and that it is the rule if the treatment advised by Whitman is faithfully carried out. I had one patient, 85 years of age, whose subcapital fracture united. At the Ancker Hospital, where we always have ten or twelve fractures of this character, we practically do not have non-union if Whitman's procedure is carried out to the finish.

Intertrochanteric fractures always unite; the problem here is to get union in a good position.

Regarding synovial fluid and non-union: The amount of synovial fluid in a normal joint is very small and the effusion in an injured joint is an inflammatory exudate. Dr. Mann's reference to the influence of synovial fluid to fracture of the patella is very convincing. There is a wide separation of fragments, but if they are brought into control by suture, union practically always occurs. Synovial fluid has a much better opportunity here to pre-

vent union than in hip fractures, where perhaps there is always at least partial contact of fragments.

While stereoscopic radiographs of fractures of the neck of the femur are interesting as a study, they are not at all necessary. A plain radiograph gives us sufficient information for diagnosis and treatment. The deformity, both clinically and pathologically, is very typical; the posterior aspect of the neck, being its weakest part, gives way first and whether impaction occurs or not, the deformity is explained by the crushing of this area, the limb thus rolls outward causing the eversion of the foot, which is so typical. With this deformity present, we know that its correction means correction of the deformed position of the fragments, and this is accomplished by traction, inversion, and abduction of the limb.

It is well to remember that incomplete fractures of the neck of the femur occur, and that both here and in fractures without displacement the careful handling of the patient, while being transported to a hospital for instance, is very important. I have seen one case where, in a doubtful diagnosis, an x-ray showed a fracture without displacement, but when the patient arrived at the hospital in the ambulance both clinically and radiographically the picture had changed to the typical deformity. It is also well to remember that in impacted fractures of the neck the impaction may be of such firmness that the patient can walk for some time before the impacted area breaks down. This is important not only from a therapeutic point of view, but also from a medicolegal one.

I recall a recent case at the Ancker Hospital of subcapital fracture in a young man with bilateral paralysis of the lower extremities due to poliomyelitis; some months after union had been obtained he fell and refractured the same hip. This time it seemed wisest to take out the head and insert the neck of the femur into the acetabulum. The head was soft and yellowish in color, and looked almost like a necrosed bone; it was quite evident that union again would be impossible.

It is also well to remember that even where a perfect anatomical result is obtained, occasionally a deforming arthritis, with osteophytic outgrowths will occur, which is very disabling.

DR. C. C. CHATTERTON (St. Paul): I remember my first visit to the American Orthopedic Association. At that meeting one of the older members stated that he never had non-union in intracapsular fractures because he treated the cases until they were well. I have seen two patients this winter with very good treatment over too short a period of time; the patients were up and about too soon, and, if callus was formed, it had broken up. I think the Whitman method of treatment for intra-capsular is the best method, and if adhered to, the time element being carefully considered with at least four months without weight-bearing, union will practically always take place. Such men as Albee even state that there are only about 10 per cent of intracapsular fractures of the hip in which bone grafts should be used. I am sure that if the Whitman method is used conscientiously, the result in intracapsular fractures will be most satisfactory.

Dr. George E. Fahr (Minneapolis) read a paper on "Myxedema Heart," illustrated with numerous lantern slides.

## DISCUSSION

DR. CARL DRAKE (St. Paul): I wish to ask Dr. Fahr whether some of this reduction in heart measurements can't be accounted for by loss of body weight, a lower diaphragm, and a swinging of the heart more towards the center of the chest? Also whether a disappearance of the myxedema might not result in the diminution in the thickness of the heart muscles?

DR. H. L. ULRICH (Minneapolis): There is no question that the heart muscle does not function as well in a certain percentage of myxedema. The far-advanced cases of dilatation with cardiac insufficiency are quite obvious. It is the mild myxedema or subthyroids with functional changes, mainly of conduction, which are more frequent, less obvious, the more overlooked. To illustrate: recently I saw a middle-aged woman, the wife of a competent physician. She had been having a great deal of trouble with attacks of auricular fibrillation. She has an organic defect—double mitral. Her basal rate was minus 25 per cent. Since using thyroid, fibrillation has not occurred. To me it is a little puzzling, physiologically speaking, how a heart which dilates several times can come back to its normal size. We have always considered that when a heart dilated and then returned to its apparent normal size there would be some change in the size of the cells themselves with a little subsequent hypertrophy. Why this does not occur in the myxedema heart I do not know.

DR. GEO. DOUGLAS HEAD (Minneapolis): I would like to raise the question of the amount of fluid actually lost by these patients while under the administration of thyroid as compared to the amount of fluid in the circulatory system when they were not taking thyroid. It does seem very remarkable that these hearts should change so tremendously in size in such a short time. I think we have all observed circulatory changes in myxedema: the lack of cardiac force, dyspnea on exertion, edema, etc., but I think Dr. Fahr has brought out something here that perhaps not many of us have appreciated. I know I have not, and I shall certainly be on the lookout for it in the future. The cause of this very remarkable dilatation of the heart chambers might possibly be explained on the basis of retention of fluid in the vascular system when thyroid is not being given as compared with that when it is given.

DR. G. SCHWYZER (Minneapolis): I would like to ask Dr. Fahr about the weight of the patient. Having seen a number of myxedematous cases with and without thyroidectomy, I am especially interested in Dr. Fahr's valuable observation. I have never noticed any heart symptoms that were alarming in any of my cases of myxedema. I wonder whether this myxedema heart, as Dr. Fahr calls it, is a rarity or whether we did not make a sufficient study of the heart in our cases.

I recall especially a case in a woman who never was operated on for her goiter, and who was a pronounced case of myxedema. She complained of marked weakness in her legs, had difficulty in her speech, her mental attitude was entirely changed, and she had gained twenty pounds in weight, due to the marked deposits of mucin in her subcutaneous tissue. These twenty pounds body-weight dis-



appeared magically by administering thyroid extract in sufficient quantity.

I am wondering whether the mucin deposit in the body might account for the change in the heart.

DR. F. E. BURCH (St. Paul): I wish to ask Dr. Fahr if he has any observations on changes in the hearts of myxedematous children.

DR. FAHR (in closing): Two gentlemen brought up the question of loss of weight. It is true there was loss of weight. That always takes place when you have myxedematous patients and put them on thyroid. The weight changes, as well as changes in the anemia, which they practically all have, are much slower than the heart change. The weight loss still keeps on after the heart has become compensated.

In connection with what Dr. Drake brought up about the diaphragm position, I used the transverse diameter measurements in this talk, but I have also measured the silhouette area which does not change much with slight change of diaphragm position. Moreover, the diaphragm is actually in nearly the same position before and after giving thyroid. So the change is not due to change in the position of the diaphragm.

About the thickness of the muscle and about the mucin deposit in the heart, Dr. Bell has looked at one of the cretin sheep hearts, and he says there is no pathologic change in the heart muscle that he has discovered so far. Thickness of the muscle can't be the thing that causes these changes for a change in thickness would be of the order of a few millimeters only.

Dr. Head asked about the fluid lost, and how much increase of fluid there might be in the circulation. One of the things that the thyroid does is to mobilize water in the tissues. When you give thyroid you can prove that water has been pulled out of the tissues and put back into the blood, which, in myxedema, has less than in the normal state. That is one reason why you get diuresis on thyroid administration.

Dr. Ulrich brought out that there might be mild borderland types of myxedema. I did not go into them tonight because they are very hard to prove. I believe, as Dr. Ulrich does, that there are many people walking around whose memory is bad, thinking a little more slowly than formerly, and when you take their basal rate it will be only minus .10 or minus .12 or minus .15, and who are frequently a little short of breath. Putting them on thyroid may help them. I notice Dr. Ulrich was keen enough to give thyroid in a case of old mitral stenosis with recent symptoms of mild myxedema. At the same time that you give the heart more work to do you are giving it more ability to do it in myxedema treated with thyroid extract. I think on the whole you are justified in giving a dose of thyroid even if there is some heart disease present, provided you watch the case carefully for a long period.

Dr. Gustav Schwyzer stated that these alarming cases are very rare in his practice, and he sees quite a lot of myxedema. I do not claim that all cases of myxedema are heart cases. In three years we have had six cases of myxedema, and in all six cases there were some symptoms of heart failure. If I should make the statement that all cases have

it, that would not be true. Heart disease is sometimes associated with myxedema. At the present time no one knows how frequently.

Dr. Burch asked about myxedema in children. I have no material to study that phase of it and have not studied that at all.

Dr. A. R. Colvin (St. Paul) reported a case of acute duodenitis, with operative and post-mortem findings:

The patient was an unmarried woman, aged 66, who entered Ancker Hospital March 28, 1927, complaining of abdominal pain, nausea, and vomiting. She said she had been suffering from a cold off and on all winter, and that she was quite suddenly taken ill forty-eight hours before admission, with pain and nausea at 9 p. m. At 2 a. m. of the next day she was unable to retain anything taken by mouth. The pain was of a sharp cutting character. For the past 15 years she says she has been bothered with gas on her stomach, and belching. She found that certain rich and greasy foods disagreed with her.

Except for childhood diseases, she had always been remarkably well.

When seen by me the next morning, after her admission, she presented the appearance of a very sick person; her pulse was frequent and irregular; temperature, 100.5°; leucocyte count, 29,000. The urine contained a heavy trace of albumin and some pus cells. One got the impression that while her sensibilities seemed blunted she evidently was suffering a good deal, but was quite careless in the recital of her symptoms.

There was general abdominal tenderness with more complaint of pressure in the right hypochondrium than elsewhere; muscular resistance, while more evident in this region, was not anywhere very marked. There was nothing abnormal made out by pelvic examination.

While realizing the gravity of her illness, in the analysis of history, symptoms, and physical findings, difficulty was experienced in arriving at the apparent beginning of her pathology. A ruptured appendix seemed improbable; there was nothing in the pelvis to cause the symptom complex, neither the history of onset nor the course afterwards was like that of perforation of gastric or duodenal ulcer, and the symptoms and physical findings were not like those usually seen from a neglected perforation. Acute pancreatitis seemed just as unlikely; and, while an acute phlegmonous or gangrenous inflammation of the gall-bladder can run a rapidly destructive course, still there seemed to be something contradictory in the story and findings. One noted the albumin and pus in the catheterized specimen of urine, without feeling that these findings had anything to do with the symptoms. And so such was the frame of mind in which one approached the operation.

A midline incision above the umbilicus disclosed an acute inflammatory condition in the region bounded by the duodenum, colon, and right kidney. The duodenum was thickened, red, and edematous, and both it and the surrounding tissues were covered with a fibrinous exudate. While there was in this region no thick pus there was a small amount of cloudy fluid. Not finding any perforation of

either the stomach or duodenum, and the gall-bladder looking more or less normal, a hurried examination of the region of the appendix was made, and, nothing being found, the operative wound was closed with drainage. The patient died eight hours later.

Post-mortem findings: There is a small amount of free purulent fluid in the peritoneal cavity. The gall-bladder wall is somewhat thickened and its surface is covered with yellow fibrin similar to that seen in the rest of the peritoneal cavity. There is an opacity of the surface, which is apparently not associated with the acute process. The mucosa is flecked with small areas of cholesterin, and the bile ducts are patent.

The stomach shows nothing of note. The first 2 cm. of the duodenum are practically normal. Beginning about in the region of the ampulla of Vater the duodenal wall is markedly thickened. This thickening involves the duodenum from this point to the beginning of the jejunum at the ligament of Treitz. Besides this thickening of the duodenal wall, there is a multiple ulcerative process of the mucosa. These ulcers are acute in appearance, irregular in outline, but for the most part are transverse in location. They have a purulent material on their bases, but there is no evidence that they perforate deeper than the submucosa. The balance of the intestinal tract shows nothing of note.

The right kidney weighs 163 grams. The capsule strips with some difficulty, tearing the cortical surface of the organ. The cut surface of the organ is cloudy and swollen in appearance and the markings are indistinct. The cut edge everts. The pelvis is slightly dilated and the ureter is indurated, but about normal in size. The left kidney weighs 105 grams. The pelvis is enormously dilated so that the organ is practically destroyed. In one calyx is lodged a stone. This stone, however, is not located at the pelvic ureteral junction. The dilatation has practically destroyed the entire kidney so that it is simply a sac and contains a purulent fluid.

#### Diagnoses:

1. Acute fibrinous peritonitis.
2. Acute ulcerative duodenitis.
3. Chronic pyonephrosis (left).
4. Renal calculus.
5. Bilateral bronchopneumonia.
6. Chronic cholecystitis.
7. Cloudy swelling of the heart, liver, and kidneys.

#### DISCUSSION

DR. A. SCHWYZER (St. Paul): This is an unusually pretty case, but I do not think it quite belongs in the same group as the cases of duodenitis which Dr. Judd reports. His cases were more of long standing and gave symptoms very similar to ulcers; they were localized infiltrations situated where most of the duodenal ulcers are found. They give a history of prolonged distress and are amenable to surgical relief.

The case which Dr. Colvin shows us here represents what we know from pathology as multiple duodenal ulcers, not very infrequently seen in grave septic infections. It may be that the kidney infection in this case was the primary cause for this. This is an acute infectious process, as part of a general sepsis.

A few weeks ago I excised one of the localized infiltrations in the duodenum, as Judd reports. It was situated near the pylorus. The symptoms were of a more chronic character, similar to ulcer. The area was removed together with the anterior part of the pyloric sphincter, and the opening closed transversely. While there was much thickening, it was mostly all in the sub-mucosa. The mucosa was not ulcerated. This patient also had an infected gall-bladder. There were no stones, but from the wall of the gall-bladder we cultured staphylococcus aureus.

DR. H. L. ULRICH (Minneapolis): Dr. Colvin's report reminds me that every once in a while a chronic infection of the genito-urinary tract is not such a mild affair. I saw a young man recently who had a chronic cystitis with a diverticulum of the bladder and pyelitis of the right side. He was systoscoped. He had an acute reaction following this and on the third day after the reaction was receding he complained of a sudden intense pain in the head and became unconscious. There were no localizing symptoms. Lumbar puncture gave us a bloody fluid followed by pure blood. He died in seven hours. Autopsy revealed a subdural hemorrhage which was universal. One cannot help feeling that his chronic infection paved the way for this hemorrhagic manifestation.

The meeting adjourned.

CARL B. DRAKE, M.D.  
Secretary

## PROCEEDINGS OF THE MINNEAPOLIS CLINICAL CLUB

Meeting of March 17, 1927

The regular monthly meeting of the Minneapolis Clinical Club was held at the Elks Club on Thursday evening, March 17, 1927. Dinner was served at 6 P. M. and the meeting was called to order by the President, Dr. J. M. Hayes, at 7 P. M. There were twenty-two members present.

The new President thanked the members of the Club for the honor given him and asked for

the co-operation of all the members for the coming year.

The President appointed Dr. Maxeiner a committee of one to take suitable action on the death of Dr. F. J. Souba, former member of the Club, and report at the next meeting.

The scientific program of the evening was as follows:



Dr. J. C. Michael reported a case of electric shock, with special reference to nervous and mental sequelæ in a non-lethal case:

The case is that of a man, age 43, married, three children, sheet-metal worker. He had never been sick to speak of, never lost a day from his work until June 2, 1925. On this day, while walking on the highway, on Western Avenue, just outside of the city limits of Minneapolis, at about twenty minutes to 9:00 P. M., an electric wire above him broke and fell on him striking his head. He recalls only that something struck him on the back of his head. He became unconscious immediately. He did not come to himself, he thinks for two or three days. Really, he says, he did not recognize his wife or children for three weeks later. He could not move when he did come to. His regular physician states that a passerby noticed the patient in a milieu of sparky wires. Soon he produced a rope and drew the patient from the wires by making traction on his legs. The patient was taken to the General Hospital.

After the accident the patient was found to have sustained burns on the back of the head, on his back, right and left hands, and elbows. These burns have mostly healed up though there is a continual aching, he says, where he was burned. Necrotic masses have been removed from the right hand from time to time. Within four weeks after the accident he started to get on his feet a little.

Summary of present complaints:

1. He cannot sleep at night; lies most every night until 3 or 4 A. M. before going to sleep. Has not slept five hours a night since the accident.

2. Pains, steady aching, in his head, sometimes more aggravated.

3. Lack of appetite.

4. Limps on right side; worse on the stairs.

5. Right hand constantly aches, unable to use it. Has aching in right side, body and legs.

6. Last two fingers get stiff frequently. They "draw" and lock.

7. Dizziness comes on in spells, especially when riding in street car, sudden changes in position, etc.

8. Right hand is deformed. There is a diffuse shrinking of the muscles, and also dying of the tissues of the hand.

Examination shows the first and second cranial nerves to be normal; no ptosis; no nystagmus. The left pupil is a little larger than the right. Position of the pupils is central. There is absence of reaction to distance and light on the left side. The right pupil is normal. Fifth and seventh cranial nerves are normal. Spoken words can be heard only a distance of three feet on the right side; otherwise eight nerve tests are normal. Other cranial nerves are also normal. The muscular system shows objectively a fairly advanced state of atrophy of the muscles of the right arm, more pronounced in the distal portion. Strength of the right hand is markedly reduced; in the upper arm the strength is 60 per cent less than that of the normal. Sensation tests show touch, pain, and vibration moderately diminished in the right arm and fingers and right leg and toes. On the left side there are no

positive abnormalities. His tendon and skin reflexes are present throughout. Speech, gait, station, stereognosis, sphincters, are all unimpaired.

Here then we have the case of a fairly young man who has been unable to follow any gainful occupation for a period approximately of two years following an injury by electricity. When we analyze his present findings we find that at this period he has not only the prominent defect in his right hand, loss of fingers, directly due to the burns, but also a residual peripheral neuritis in the right arm and leg, left-sided internal ophthalmoplegia, as well as nonlocalizing nerve symptoms: insomnia, headache, anorexia, dizziness, and generalized weakness.

In this case apparent death came on suddenly. Consciousness returned partially at least in about thirty-six hours. There was psychosis, a protracted delirium, for several weeks after the injury. Besides brain involvement there was affection of the peripheral nerves and post-traumatic neurosis has become a persisting, complicating syndrome. The burns of the right hand particularly constitute, even almost two years after the injury, an important surgical condition. Conditions such as varying tensions of current, nature of current, whether direct or alternating, resistances to the current, areas of the body affected in the circuit, determine mortality. Ventricular fibrillation has been shown by Cunningham, as well as by Prevost and Batteli, to be fatal. Circuits from one arm across the chest to the other, when the heart is directly in the circuit, are the ones most frequently responsible for this lesion. Artificial respiration, *though it should always be performed*, will actually not bring these patients back to life. Respiratory paralysis is produced when a craniocerebral circuit obtains. However, only the voltages between 1,700 and 4,000 or 5,000 produce respiratory paralysis. In these cases there is "apparent death," and it is in this group where artificial respiration should be long continued, for hours. Recovery may be expected if not a too violent injury has produced disruptive lesions. The clinical and post-mortem manifestations, aside from burns, relate chiefly to the cardiovascular and to the nervous systems.

#### DISCUSSION

DR. BULKLEY: This question of electric shock is of importance statistically. Probably the reason so few are seen in the General Hospital is that the Northern States Power Company is so organized that their cases are privately hospitalized. I have seen a good many cases of electric shock, of all degrees. What Dr. Michael said about the points of entrance and the exit is true. The point of entrance is small, and the point of exit large. Probably next to a phosphorus burn the electric burns are the slowest to heal. The question of voltage is interesting. You may remember the case of a child here in the Twin Cities, who was taking a bath and reached up to an electric socket and only 110 volts passed through her, yet she was killed instantly. On the other hand, sometimes even very high voltages do not kill. In my own experience, I have seen three or four cases. One man survived with good contact 4400 volts, which is an enormous dose of electricity.

I imagine that most cases occur in electric light

and power plants. Occasionally in storms electric wires come down. I have seen two children and one adult burned in this way. It would be interesting to know the experience of the trolley company with electric burns.

DR. HANNAH: Has this case been settled?

DR. MICHAEL: Yes.

DR. HANNAH: I had occasion to see this man. There is nothing I can add to his condition as described by Dr. Michael except to say that he had a positive Wassermann. It seemed to me this was not an uncomplicated case. The reason we were suspicious of syphilis was because the left pupil did not react to light and accommodation. I think the question of syphilis certainly enters into this particular case.

DR. TURNACLIFF: My experience with the Street Railway Company consists of three or four reports which have passed through my hands. One man received 13,000 volts entering through hands and out through the scalp. He had deep burns on the scalp and face so that the bone was injured a great deal. He had some psychosis which lasted quite a while after.

About a year ago a man claimed that lightning struck the streetcar and he had what was called hysterical paralysis.

Two weeks ago there was a man in St. Paul who received a shock and had complete hemiplegia. He went to work to-day being laid up only two weeks; so there probably was no real injury to the brain.

DR. ZIEROLD: I do not know very much about this condition. I have not seen many cases of severe electrical burns. The thing which has come to my notice is what Dr. Bulkley has noticed; that not until very late are you able to determine the extent of the destruction of tissue in electric burns. This is apparently the result of trophic disturbances and apparently not the direct result of the burning itself. At the General Hospital I think the electric burn is a rarity. I do not recall any in the last two years. Of course the exact nature of death from electric burns would not come out except at autopsy.

DR. MICHAEL (closing): The physician who referred this patient to me said that the man was reported to have had a positive blood Wassermann test.

I did not feel that a unilateral internal ophthalmoplegia (absent light and accommodation reflex) is necessarily indicative of nerve syphilis, in view of the onset and course of other nerve symptoms so clearly connectable to the electric injury. My notes show normal reactivity in the other pupil. The signs of peripheral nerve injury were most striking in the right arm which is still involved by the old unhealed burn. That locus may be presumed to have been the point of exit of the current, where, as we know, the most severe burns do take place.

In animal experiments it has been definitely shown that high voltages, 500 or over, do not cause fibrillation of the heart. The low voltages, 500 or less, depending on contacts and resistances, cause ventricular fibrillation more frequently.

I do believe there are a good many cases of mild electric shock that we do not see. They are slight and recover in a short time. Some of these patients

feel even better than before, which may be due to the physiological action of the electricity.

Dr. Erling W. Hansen reported a series of cases which he stated would show more or less the interdependence of the ophthalmologist and the men in other specialities.

DR. CAMP: These cases Dr. Hansen has reported are all exceedingly interesting and all unusual. Some of them I had the opportunity of seeing. The question arises, in inflammation of the anterior segment of the eye, the cornea, and sclera; as to the differentiation between syphilis and tuberculosis and, in some cases, focal infection; and one through which the ophthalmologist has to go by the process of differentiation. It is very difficult to differentiate these, particularly between tuberculosis and syphilis. In studying sections of the cornea in particular, the histologic picture of these two conditions is almost identical, so it is no wonder that we have difficulty in differentiating the two clinically because it is almost impossible to do it even microscopically. We also have a type of tuberculosis which is probably not due to the direct action of the tubercle bacillus. Verhoeff described it years ago and called it tuberculous sclero-keratitis. It begins in the limbus or anterior part of the sclera and occurs mostly in females of middle age who become sensitized to tuberculosis earlier in life and then get these anaphylatic attacks spontaneously or when treated with tuberculin. Treatment is very unsatisfactory. The commonest type of inflammation in the anterior segment of the eye is that which is due to focal infection; next comes syphilis and next tuberculosis.

DR. HANNAH: The first case Dr. Hansen referred to as being one of encephalitis had only one other clinical findings, in addition to the eye symptoms, and that was muscular twitching. Since then I have seen this man, and he certainly has slowed up mentally. The question of the eyes rolling upward in particular cases is very interesting. I wish to mention the case of a woman who was a nurse in France. She had a vacation to go over to England. During a certain period on the boat she was dizzy and saw double for a few hours. She thought she was suffering from seasickness. She recovered and went back to France and seemed perfectly well in a short time. In 1923 she came to Minneapolis to live. At times, when walking, she would fall. After that the woman developed a distinct paralysis agitans syndrome. An interesting part about the trouble with the eyes is that she had paroxysms, and the eyes would be pulled up so that she could not see. A hypodermic of morphin and hyoscin would relieve the condition temporarily. At the present time she is extremely rigid and cannot turn over in bed and is a complete invalid. The original attack in 1918 was very slight, now she presents a marked case of paralysis agitans.

Another case I saw a few years ago was that of a child two months old, who had a convulsion. Following the convulsion the mother found the temperature to be 101°. In the right eye there was a paralysis of the internal rectus. Some three years have elapsed, and now the child appears like an old man. This is a typical case of Parkinson's dis-



ease in a child four and a half years old, with only a very transitory attack when two months old. This is the very earliest case I have seen.

Dr. S. R. Maxeiner reported two cases (and showed specimens) of operations for tubercular epididymitis.

One is from a patient with pulmonary tuberculosis on whom I operated two years ago for tuberculous epididymitis in which the testicle was so badly involved it had to be sacrificed. Two months ago the patient developed an epididymitis on the other side and asked to have it removed promptly to try to conserve the other testicle. The testicle was not involved.

The other case is of a young man who was treated by Drs. Nippert and McFarland for a tuberculous pleural effusion. He developed a swelling four months ago in one epididymis. This is the fresh specimen. There is tuberculosis of the globus major, and the globus minor is apparently not involved.

This is the thirtieth tuberculous epididymis I have operated on in twenty-one different patients. We have felt that by getting rid of early tuberculosis of the epididymis we can save the testicle and rid the patient of one focus.

In the fresh specimen tubercle bacilli were demonstrated in the smear. Frozen sections showed definite tubercles in the other.

DR. MAXEINER: Out of the thirty cases, we have sacrificed the testicle only in six cases, and those were all late with involvement of the testicle.

Dr. H. B. Dornblaser read his Inaugural Thesis, entitled "Antenatal Pneumonia," and reported two cases of eclampsia as follows:

CASE 1.—The first case is that of a woman 28 years of age whom I followed from the first month of her pregnancy. Her urine remained entirely normal until her last visit to the office a few days before delivery. The blood pressure was normal also. On her last visit her blood pressure was up to 150, and the urine showed a trace of albumin. I telephoned her to live on a milk diet and let me have another specimen of urine in a day or so. Her mother called me a few days later to say she was having some bleeding from the vagina. When I saw the patient her face was quite swollen, and she said her vision had been rather blurry and there were some spots before her eyes. The blood pressure was 186.

I took her to the hospital and attempted to start labor and succeeded. The pressure remained at that level all day. I prepared to stay in the hospital that night and was just lying down when the nurse called and said the patient had a severe headache and was unable to use her right arm or leg. Her blood pressure was 206. I put in a large caliber needle and removed 600 c.c. of blood from her median basilic vein, and the pressure went down to 130/90. It was then a case of emptying the uterus as soon as possible in as conservative a manner as possible. The child lay in S. O. A. The woman had been married seven years and this was her first pregnancy. She was very anxious to have the baby. She had several fibroids in the uterus, and there was

a possibility of no other pregnancies. Also the birth canal had never been dilated, so I discarded the idea of delivering her though the vagina and did a Cæsarean section. We got a living, healthy female child. In the time it took to get the operating room ready her pressure went from 130 to 160. I bled her another 500 c.c. or more by allowing rather free hemorrhage on the operating table.

The blood pressure after operation was 90/50. Catheterized specimen of urine at this time showed sp. gr. 1,020, acid, albumin + + + +, and hyaline and granular casts.

The next day her pressure was 146/80 and she secreted 660 c.c. of urine. Then her kidneys shut down entirely for about twelve hours and did not secrete a drop. I was able to get her to sweat some. I then gave her 500 c.c. of 10 per cent glucose intravenously—with 20 units of insulin. She started to secrete urine again. The urine after this was alkaline with no albumin, but positive for casts. Since then she has been running a fairly typical course and getting better each day. Her urine output has been increasing and with ordinary doses of magnesium sulphate, and glucose and soda by bowel. Her blood pressure has come down to 120/78. She is now moving the right arm and leg better. The urine to-day was albumin free and contained no casts. Examination by a neurologist showed a hemorrhage in the internal capsule.

CASE 2.—The other woman, 29 years of age, also a primigravida did not want her baby at first, but as the pregnancy advanced she became very anxious for it. She differed from the first patient in that her pressure gradually crept up. Her diet was cut down till she was living on milk and taking an ounce of magnesium sulphate each morning. She came into the office a week or ten days ago when her pressure was 192. I sent her to the hospital right away, and there it was 196. This just happened the day after my experience with the patient just mentioned, and I did not want to repeat that experience. This presented a good deal the same situation as the first case, that is, an undilated cervix, in an elderly primipara. We did a section on her and got a living baby. The next day she had three convulsions. She was given sugar intravenously with insulin. This patient was also given 10 grams of sodium bicarbonate, and for about two days the urine output was greater than the fluid intake. She has gradually improved under the same treatment as the other patient. To-day her pressure was 134/96, and her urine had a faint trace of albumin.

#### DISCUSSION

DR. WEBB: I would like to ask Dr. Dornblaser if there has been a change in the attitude toward Cæsarean section?

DR. DORNBLASER (closing): The urine in this patient I know was acidified in our laboratory when the test for albumin was made. I do not know what was done in the hospital laboratory.

With regard to the question of Cæsarean section I think that is a pretty hard question to answer. I have talked to several people about the question of eclampsia, and they say that there is no treatment for the condition. I think the more conservative one can be, the better. The majority of women do

not want to go through a pregnancy and have a dead baby, and they are willing to have something more radical done in order to have a living baby.

My experience in putting in bags in a canal that has never been dilated has been poor, and the same is true of version and extraction. I consider in these cases that it is better to take a chance on giving the woman a living baby. I felt in each of these two cases that the mother's chances were just as good with a Cæsarean as they were by using some operative method from below. I do not know how it would always work, but in these two it worked very well indeed.

DR. LAJOIE: I heard Dr. Litzenberg make the remark once that a Cæsarean section is the most serious thing that can happen to a pregnant woman.

The meeting adjourned.

H. M. N. WYNNE, M.D.,

Secretary

## BOOK NOTICES

THE FIFTH AVENUE HOSPITAL CLINICS, New York City. First Series. Based on the Material from the Semimonthly Staff Meetings. 1825. Illustrated. 336 pages. Cloth, \$5.00. New York City: Paul B. Hoeber, Inc., 1927.

This volume is a collection of material presented at the semimonthly meeting of the staff of the Fifth Avenue Hospital, chiefly by members of the hospital staff. The majority of the reports are interesting, but there is very little of original presentation.

The volume consists of twenty-six articles. The following is a brief review of the most interesting of these:

Philip M. Grausman reports a series of cases of uterine fibrosis following salpingectomy which later required surgical intervention. He discusses the causes of fibrosis uteri and concludes that all cases of purulent salpingectomy which have required extirpation of the tubes should be accompanied by an hysterectomy. A brief review of our present conceptions of asthma is presented by Amarez. A very elementary discussion of cardiac murmurs, such as can be found in any ordinary text-book, is presented by Raisbeck.

The Department of Oral Surgery is represented by Bissel B. Palmer, who emphasizes the proper co-operation between dentistry and medicine and describes the organization and equipment of this department in the hospital.

Fred H. Bartlett from the Department of Pediatrics discusses convulsions in infancy and states that if infants were properly fed and properly cared

for 90 per cent of the convulsions in infants could be avoided.

A brief but valuable discussion of surgical treatment for pulmonary tuberculosis is presented by Adrian Van S. Lambert. He describes the technic of the various procedures, the advantages and relative importance of the different operations, and points out that surgery in tuberculosis is nothing more nor less than an adjunct to the usual treatment carried out by the physician and does not in itself effect a cure.

One of the few true experimental reports is by Edmund J. Rhodebeck on a study in urea feeding. The present renal function tests are discussed and also the previous work on urea feeding. The author has given urea by mouth in normal cases, a case of nephrosis and a case of essential hypertension, and studied the blood urea curve and the urea concentration in the urine. He presents some very interesting charts and concludes that this method is more accurate and sensitive than any of our present renal function tests.

Dr. Lewis Gregory Cole shows a series of interesting chest plates illustrating various types of tuberculous infections. He also presents his original charts for the analysis of chest roentgenograms by means of which he believes the clinical significance and prognosis of a given case of tuberculosis may be determined.

The subject of xanthoma diabeticorum is reviewed by Eli Goldstein and John Harris, and a case of this interesting condition is reported. This case illustrates that there is no constant relationship between the level of the blood cholestrin and the presence of a xanthoma nodule. The nodule underwent three distinct types of resolution with little or no reference to the general condition: (a) the lesions on the palms disappeared completely; (b) those on the elbows and the thigh coalesced and left large pigmented patches; and (c) those on the legs underwent degenerative changes resulting in extensive scar formation, a process hitherto undescribed.

There is a brief symposium on thyroid gland deficiency with nothing of any special interest. It is emphasized that Lugol's solution in exophthalmic goiter is contra-indicated except as a pre-operative measure.

A very elementary discussion of diet and insulin in diabetes is given by Charles F. Tenney. A more valuable contribution is that of Charles F. Tenney and Joseph Lintz, who report on the effects of intravenous injections of neutral acriflavine in sepsis. They conclude that there is no improvement following the intravenous use of acriflavine following sepsis or bacteremia.

A discussion of cervical adenitis including the surgical anatomy and the proper surgical treatment is well presented by E. Franklin Carter.

—M. H. NATHANSON, M.D.



# THE JOURNAL-LANCET

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JULY 1, 1927

## THE MAN OF THE HOUR

For more than a month the newspapers have been full of the heroic deed of Lindbergh, and the *Cleveland Press* suggests that we are now recovered somewhat from our Lindbergh jag. The probabilities are that no man who is heard of in history or with any fame at all has had his name and picture in so many papers all over the world as has the famous aviator, Lindbergh. It is quite likely that other men will follow in his air-steps, and make the same sort of spectacular flight over other seas, but because Lindbergh was the first to go alone, and to finish in such completeness the task he set himself, they will not attract the attention he did, although the two other men, Chamberlain and Levine, did an almost equal stunt. But they were second, not first. It seems rather strange that the English aviators who some years ago came from Ireland to Nova Scotia were so quickly forgotten; but there were two of them, not one alone and in a single plane, as was Lindbergh. All of these men will probably be remembered for a time, and some of them for a long time. However, the general public will forget them as soon as public attention is attracted to the next spectacular play of any individual, no matter what he does. At the same time this young man deserves all the praise the Nation can give to him, although,

perhaps, we overdo it a bit, being just every-day Americans. It requires a flaming ambition, and then it is spectacular, so everyone, from the lowest to the highest, gives him popular clamour. And unless you do something of this sort you will get little or nothing, neither honor nor riches.

There are many heroes in this world, local, general, and international, yet most of them have been forgotten. We wonder how many of us had our memories jogged as we looked through the daily press the other day and saw a reference to Dr. Walter Reed, who was in the Government service shortly after the French failed to finish the Panama Canal. A number of investigators went down to Panama, and Dr. Walter Reed suspected that the yellow fever scourge was due to mosquitoes. He called for volunteers, and two men, Kissinger, a private in the army, and J. J. Moran, volunteered for one of the decisive tests. They were locked in a room for a night with five mosquitoes that had bitten yellow-fever patients. Both of these men had yellow fever, as a consequence, and came within an ace of dying, but apparently both are living. Moran is living somewhere in the Canal Zone, and apparently has recovered from the test. But Kissinger has been an invalid ever since he proved Walter Reed's contention; and now, eleven years after his experiment, Congress granted a grudging \$100 a month to Kissinger, hardly enough to keep him in medicines. His wife has had to take in washing to help keep the wolf from the door. Kissinger was a hero, and through his experiment Dr. Walter Reed worked out this problem and incidentally saved thousands of lives by the work of these scientists. Panama was purged of yellow fever and of mosquitoes. Who got the fame? Walter Reed has a hospital in Washington named for him. Moran is forgotten. Kissinger lives an invalid, and we are told that even the people of the town of Andrews, Indiana, where he lives, do not know they have a great hero living among them. Dr. Reed said of his helpers: "This exhibition of moral courage has never been surpassed in the army of the United States." But what of it? For some of the heroes, nothing, for others, a pittance and oblivion. They go unrewarded, unhonored, and unsung, whereas Lindbergh acquired the very glamour we are all seeking because he accomplished this feat, and he received innumerable rewards.

There are any number of these men living who have served a great purpose and have by their act saved many lives and demonstrated

many principles. Looking over a list of all the great scientists of the age, how much does the public know about them? How many of them were ever recognized, or remembered, as savers of lives? How many have received suitable memorials, honoraria, or any other rewards?

### SYNTHETIC ADVERTISING

The time of the year is nearly over when our medical meetings bring their elaborate programs to a close, and with them all there has been a certain amount of real advertising, that is, the medical men have received due honor for the work they have accomplished and a few medical men are going to have their names in the newspapers for reading a paper at a convention, while many other medical men are grinding their teeth (real or artificial) because they are envious of their more fortunate brethren who are chosen to appear on the programs.

We are a funny lot of people, we doctors. For the most part we are indifferent about many things, or overzealous and very much oversensitive, and we suffer from a mental hyperasthesia—all because someone has perhaps taken away some of our glory. During the recent medical convention in Washington, there were a number of very good things in the daily press, and they were written with evident care, perhaps some of them prepared by the writers of different papers. Let us hope so, for a little more accurate information than the average reporter can give of a medical conference is needed, and, incidentally, if this reporter does mention a name now and then—why worry? It will soon be forgotten; it does not have the same effect as it used to have. When the newspaper reader hears of Dr. So-and-so in the daily press he does not rush up to the said doctor's office for an examination, but snoops around and inquires whether there is not a better doctor somewhere, and some other doctor may get the glory that perhaps belongs to the first man.

Now it is a privilege, perhaps a necessity, to have medical talks go out over the radio. At the American Medical Association tentative permission was given to the doctors for certain purposes. If it was a matter of self-advertising, he was debarred, and the doctor who buys time on the air or who operates his own broadcasting station for self-advertising purposes came in for the condemnation of the House of Delegates; but if he gives a medical talk under the auspices of a public organization or a medical society, it is considered ethical from every angle. The

same still holds good about advertising in the newspapers. If a doctor comes out with an advertisement to the effect that he can cure such-and-such a disease, or guarantees to do so, he is looked upon as a faker. But if it comes to the mind of the public that a medical man has discovered a remedy for a certain disease, it may be broadcast providing the medical man's name is eliminated.

The University of Arkansas has been praised for its postgraduate course in medicine, broadcast from its own station. It was intended primarily for physicians, but laymen tune in and get the benefit of it. Perhaps that is one reason why the average physician complains that his business is not so good as it used to be; for people are being instructed in so many different ways on the care of themselves, prevention of illness, and things on that order that physicians are not called upon as much as formerly for minor ailments. Every state, every county, and every town of any reasonable size has some public-health work that is being done, and done as a rule most efficiently, by trained people who know what public health means. It is done by physicians who cheerfully enlist in the service of the public-health talks and give out a lot of good commonsense instruction and information. It is also done by nurses who are trained in this work. They have a certain something about them that inspires confidence in their efforts to instruct the people and tell them how to keep well. Those who do not possess this personal equation do not succeed, and they find themselves entering on other duties. Of course in the small towns the public-health worker is assisted by the local women, some of whom are particularly adapted to this kind of work; and sometimes others who should be disqualified but cannot be on account of their social status assume command, they attempt to assume control, and in the end the patient gets the worst of it. All these activities advertise the town, the county, and the state. Then, too, we have a large number of healers who are not in the medical profession, but are sitting on the doorstep waiting for the door to open so they may enter. They take a good deal of responsibility, and they, in some instances, possess a certain amount of ability, as well as judgment, and they help the people keep well. Even if their information is not always very good, their qualifications untried, they produce a certain psychic effect in the sick or the alleged sick which cheers them and tides them over a temporary bit of "nerves." Of course, there are other activities



going on all the time. Many towns are burdened with workers who have neither force nor education. Many of them have a rubber spine and some of them have a rubber soul which prevents them from expanding. They can ride any side of a fence, an argument, or a situation, but they are all self-advertisers. What they assume is good for the public is what we critics may assume is good only for themselves. Their vanity rises above everything and they leave their audience with a self-satisfied smirk that fools no one. It reminds us of the individual, illustrated by a couplet, who went in to see a busy business man who was not only tactful but vigorous, and who knew how to handle people; when the individual landed he breathed these words: "He kicked me downstairs with such infinite grace, I thought he was handing me up."

### THE LAYMAN'S CRITICISM OF HOSPITALS

Mr. Andrew Gump, who has been featured, his face particularly, on the back page of the *Minneapolis Journal* for many years, slipped on a banana peel and broke his leg. It is a pity he did not break his chin or rather deform his face so he would look as if he had a chin. But we have to accept Andrew Gump because he represents the type of a large number of people. Instead of throwing him into the underbrush, he was carted into a hospital and from then on related his difficulties in getting a doctor to set his broken leg. In the meantime he had abundant time in which to criticize the management of the hospital, the infirmities and neglect of the nurses, and the indifference of the orderlies, and particularly the indifference of the surgeons; he was kept waiting with this broken leg for at least an hour and seventeen minutes, when it was put in a cast, as is usually the case. From that time on he examined the hospital through his own long-vision eyes and came to the conclusion that the whole thing was run on an improper basis; that they charged exorbitantly for their rooms, that the food and service were very poor, and not at all to his liking. So he growled at everything and everyone,—nurses, doctors, orderlies, and his board and room. To listen to his imaginary conversation one would think he paid several hundred dollars a day for his accommodations, and that the hospital was becoming enormously enriched, due to his presence there. Then, fortunately for the hospital, he was alarmed at something at the end of four or five

days and escaped despite his broken leg. Since then he has been raising his particular kind of torment at home, where he can be indulged or neglected just as the family pleases. He still goes on with his criticisms, enlivening the back page of the newspaper and the admiring world with his witticisms, which are satirical and abusive. Again, this is the attitude of a great many people of the Gump variety. They have no chins, they have an extremely limited amount of brains, and in many of them the brain simply rattles around in an almost empty skull. The average individual, who does but little thinking on his own part, believes that hospitals and doctors are making large sums of money, and that it is a wonderfully paying proposition, requiring but little care and attention, and very little supervision; these people think the patients are expected to take care of themselves.

To one who is experienced in dealing with hospitals some facts and figures might be given out that would jolt the average unbeliever. A large hospital in any city of the size of Minneapolis or St. Paul would cost anywhere from \$400,000 to \$1,000,000, built and equipped in the proper manner. Usually these hospitals are financed by voluntary subscriptions and the sale of bonds or stocks, and it takes a high-grade hospital a long time to get out of debt. In a 200-bed hospital, which is the ordinary size, one seldom finds it filled, and if it has only 125 patients in the hospital on an average, the hospital does not pay. It has all it can do to squeeze through. Very few consider the enormous upkeep of a hospital, particularly a hospital that maintains a training-school, which is a very expensive but very necessary adjunct to the large hospital. The chiefs of the nursing staff have to be women or men of experience, but they are very moderately paid. A woman who can make \$2,400 a year as a head of a hospital considers herself very fortunate. And a nurse who gets \$100 a month must be a very high-grade graduate. True, she gets her meals, but they are paid for, as a rule, by the patient. There are numerous expenses that would be almost impossible to list. They go into making up all sorts of supplies, such as linen, surgical dressings, and everything connected with an operating room. In fact the equipment and maintenance of the surgical department of a hospital is the most expensive item with which the doctors have to contend. The superintendent of a hospital told the writer that sometimes they had \$2,000 in the bank at the beginning of the month and that at the be-

ginning of the next month they might have \$5 to their credit. This means that either the hospital has not been well patronized or, more than likely, that the patients have not paid their bills, consequently the hospital carries a heavy deficit which is not very easily made up, as it is a very difficult procedure to put a hospital on its feet again. Then, with all the outside expenses, such as taxes and other financial burdens, it is a strenuous proposition. Some time ago in one of our daily papers one of the numerous letter writers that always rush into print came out with a letter on the "commercialism of the average hospital," and he intimates that it is a drag on progress and science if Andy's cartoon is based on facts, as he fears it is. This man is a typical twin brother to Andy Gump, who speaks without facts, without knowledge, and yet dares to criticize a hospital which probably does more good work in one hour than he could do in fourteen months. Of course, the majority of hospitals and particularly the smaller ones, are run at a definite and almost continuous loss; they are either supported by private individuals, or owners, or men and women who love to take care of the sick and are not expecting a commercial reward. Some of these hospitals are small enough so they can just get through by meeting their own expenses but paying the owners nothing, yet they give satisfaction because they are extending charity to those who deserve it, and very often to those who do not deserve it, for the bane of most hospitals is the non-paying guest, who even goes out of the window sometimes so he will not have to pay his bill. Every hospital can give numerous instances of this unexpected deficit.

### A DEADLY FOREWORD

*Minnesota Chats*, a monthly journal of the University of Minnesota, devotes its second cover page to a "Foreword" on the late Dean Owre of the Dental College, or College of Dentistry, of the University who has been called to Columbia University.

In the opening line of this Foreword reference is made to "The late Dr. F. A. Dunsmoor." As Dr. Dunsmoor is out of the city, and not expected to be in his office until next week, we are unable to interview him as to the amount of exaggeration in this statement (the foreword).

## MISCELLANY

### ATTENTION OF FORMER ILLINOIS DOCTORS

Doctors who lived formerly in Illinois, or who are descendants of pioneer physicians of the "Illinois country" will hear with interest that Volume 1 of the "History of Medical Practice in the State of Illinois" is ready for delivery.

The History has been written under the supervision of a committee appointed by the Illinois State Medical Society as a commemoration of its seventy-fifth anniversary, but more especially to make a living tribute to those valiant men of the medical profession who played so able a part in the exploration, settlement and development of the Illinois country.

In this first volume of the History are set down events from the earliest available knowledge of conditions in the Illinois country, along through the days of the Aborigines, and commencing with the actual records when, in 1673, Father Marquette had medical attention in Chicago, up until the year 1850.

In the second volume (now in preparation), narration continues up until the present time. Future years will bring other volumes so that this History will be an ever virile monument to the men and incidents whom it would honor.

Research of years resulted in an opulent supply of material from which to compile this History and has evidenced to an almost unbelievable degree the vital part played by physicians in every angle of the exploration, settlement and development of a country that is one of the richest and most influential sections of the richest country in the world.

It must be remembered that originally the Illinois country encompassed a territory far greater than the area now known as the states of Illinois, Wisconsin, Indiana, Missouri, Kentucky and Iowa, as well as what is now Illinois, and even some sections of Ohio fell into that primitive epitome of the Illinois country. In the southern part of the state it was well into the nineteenth century before Missouri and Illinois ever acknowledged the natural divorce of interests made by the Mississippi river. Because of this, naturally enough, close interest in this history extends to physicians or to their descendants in practically every state in the Mississippi Valley or contiguous thereto.

Rare maps, unusual personal memorabilia and rare discretion in compilation, make this History of unique interest to doctors everywhere and to many laymen.

This History of medical practice in the state of Illinois embodies, in the course of its narration, an interesting and illustrated digest of the early efforts of white settlers in Illinois, with specific allusion to the share in these tasks, performed by medical men. Included are portraits of rare interest, reproductions of historic documents, excerpts from diaries, personal letters, human reminiscences of days fraught with peril, filled with hope, and not



devoid of humor, through a period of about 250 years. From the days of the "Chirurgeon" who attended Pere Marquette, through the massacres at Fort Dearborn, the years of Indian raids, down with the circuit-riding "saddle-bag" doctors, to these days of radium and radio, this History marches. Attics, family albums, safe deposit vaults, and state records have been ransacked to produce the material needed for this chronicle. Illinois holds today the honor of being the world's medical center. Progressive steps of this achievement, and its contributive factors such as hospitals, asylums, sanitariums and allied institutions and medical colleges are set forth in detail, both pictorial, documentary and narrative. In brief, this account epitomizes the almost unequalled growth of a community whose economic wealth is paralleled by its public health. Personal data of the men, of the organizations,—including pioneer army and navy physicians and surgeons and local, county and district societies, schools and hospitals as well as of the Illinois State Medical Society itself; various internationally famous medical discoveries made by Illinois men; the state's contribution to the world of research; medical libraries and periodicals existent in Illinois; campaigns for medical protection against enemies of public health; details of the various Medical Practice Acts; state sanitation from the notable drainage canal and the supervision of food supplies, vital statistics; meetings, officers, policies and finances of the State Society;—all this and more in accurate transcription make this History a miniature encyclopedia of scientific advance and desirable and hitherto unavailable information.

The edition is limited. It will not be reprinted. A place in every physician's library is merited by this volume, both as a tribute to the men who blazed the trail for modern scientific medicine and as an ever-present reminder and authority as to what is happening to medicine right in this state every day, so far as finance, discovery, legislation and public relations are concerned, and the men who are responsible for the heritage of trust for over two centuries and a half. Volume One is now ready. Volume Two will follow soon. Orders may be sent to Committee on Medical History, Illinois State Medical Society, Medical & Dental Arts Building, 185 North Wabash Avenue, Chicago, Illinois, Charles J. Whalen, M. D., Chairman.

## NEWS ITEMS

Dr. C. J. Goodheart has moved from Akeley to St. Paul.

Dr. B. Scodel has moved from St. Paul to Big Falls.

Dr. C. T. Helme has moved from Blunt, S. D., to Mellette, S. D.

Dr. Frederick W. Van Valkenburg, of Long Prairie, was married to Miss Constance Payte, of St. Paul, last month.

Dr. Harry J. Robb has moved from Broadview, Mont., to Plentywood, Mont.

Dr. Harold Rees has moved from Ogilvie to Cambridge. Dr. Rees formerly practiced in St. Paul.

Dr. Warren E. Wilson, of Northfield, was married last month to Miss Myrtle Nolan, of Minneapolis.

Dr. Edward A. Regnier, of Minneapolis, was married last month to Miss Mary C. Hoy, also of Minneapolis.

Dr. W. M. Kyde, of Helena, Mont., died last week at the age of 31. Dr. Kyde graduated at Rush, class of '21.

Dr. George M. Fredericks, of Minneapolis, was married last month to Miss Elizabeth F. Bromberg, also of Minneapolis.

Dr. Emil S. Geist and family, of Minneapolis, have gone to Europe for the summer. They will return early in September.

The Great Northern Railway Physicians' and Surgeons' Association held its annual meeting in Great Falls, Mont., last week.

Dr. Lynn B. Vaughn, of Hurley, S. D., is to spend a year in postgraduate work in pediatrics. He will spend most of the year in Chicago.

The Montana State Medical Association, the State Health Officers' Association, and the State Nurses' Association will meet in Missoula on July 11 to 14.

Dr. J. C. Giere, of St. Paul, a 1925 graduate of the Medical School of the U. of M., was married last month to Miss Leonore M. Lillejord, of Minneapolis.

Ancker Hospital, of St. Paul, will no longer receive full-pay patients, and will charge a fee of all patients able to pay. All other patients will be charity patients.

Dr. Herbert Weinouer, a recent graduate, who served his internship at the Binghamton State and the Montefiore Hospitals of New York, has located at Big Falls, Minn.

The University of Wisconsin granted its first degree in medicine last month when the degree of M.D. was conferred upon twenty-five graduates, six women and nineteen men.

Dr. George B. Whare, of Two Harbors, died last month at the age of 50. Dr. Whare was a graduate of Rush, class of '03, and had practiced in Two Harbors for fifteen years.

Dr. George H. Schlesselman, of the Cobb Clinic, St. Paul, has taken over the practice of

Dr. F. C. Wheat, of Anoka, who recently moved to Sioux City, Iowa, to join a large Clinic in that city.

The new Deaconess Hospital at Billings, Mont., is now open, with a staff of twenty-five physicians and surgeons, of which Dr. A. J. Movius is president, and Dr. E. G. Balsam is secretary.

Drs. Frederick Fuerste and Iver T. Dahlin, of Proctor, have resigned from the staff of the Proctor Hospital. Dr. Fuerste goes East for postgraduate work, and Dr. Dahlin will take up work in Aurora.

Dr. F. P. Silvernale, who recently sold his practice at Elmore to A. W. Sommer, a recent graduate of the Medical School of the U. of M., has formed a partnership with Dr. J. C. MacGregor, of Great Falls, Mont.

Dr. Joseph Graham Mayo, of Rochester, was married last month to Miss Ruth Rakowsky, of Joplin, Mo. Both Dr. J. G. Mayo and Dr. C. W. Mayo married in June, and are sons of Dr. Charles H. Mayo, of Rochester.

Dr. J. L. Stewart, who has been located in the Medical Department of the Homestake Mining Company and located in the Company's hospital at Lead has been transferred to Nemo, S. D., and Dr. D. D. Raber, of Nemo, has been transferred to Lead.

Dr. John J. Whyte, of Golden Valley, N. D., was killed in an automobile accident last month. He died at the age of 59. Dr. Whyte formerly practiced in Bertha, Minn. He was a graduate of McGill, class of '89, and had practiced in North Dakota since 1907.

Dr. Rollo C. Dugan, of Ottawa, Kas., died last month at the age of 62. Dr. Dugan graduated from the Medical School of the U. of M. in the class of '90, began practice at Eyota, Minn., and moved to Ottawa, Kas., in 1914, where he practiced until his death on June 10.

Dr. William M. James, of the Herrick Clinic of Panama, gave a Mayo Foundation lecture on "Intestinal amebiasis in man" on June 6. The exhibit prepared by Dr. James and others from Ancon, Santa Tomas, and Panama Hospitals, illustrating the diagnosis, etiology and pathology of infection with *Entameba histolytica* received a medal at the recent meeting of the American Medical Association.

At the annual meeting of the Minnesota Hospital Association, held last week at Duluth, the

following officers were elected for the current year: President, Dr. E. S. Mariette, Superintendent of the Glen Lake Sanatorium, Oak Terrace; vice-president, H. B. Smith, Superintendent of the Northern Pacific Hospital, St. Paul; secretary-treasurer, Dr. Donald C. Smelzer, Superintendent of the Miller Hospital, St. Paul. The next (1928) meeting of the Association will be held in Minneapolis.

Dr. Frederick W. Schlutz, Dean of the Department of Pediatrics, University of Minnesota, has been invited by the Argentine Medical and the Argentine Pediatric Societies to give several lectures on pediatric topics before them in Buenos Aires. On his way down he will speak at the University of Rio de Janeiro and the University of Montevideo, and on his way home by way of the Pacific he will speak at San Marco University, Lima, Peru. He sailed on June 25, and will return home about September 1.

Dr. Herbert G. Lampson, of Duluth, died last week (June 25) at the age of 56. Dr. Lampson was a graduate of the University of Michigan Medical School, class of '95, and had practiced in Glidden and Washburn, Wis., before going to Duluth. He was prominent in tuberculosis work and had made two important surveys of tuberculosis in Minnesota which attracted wide attention. He was also active in sanitary work. He was at one time health officer at Rochester and had been County Health Officer of St. Louis County for several years.

The following South Dakota physicians have been designated for duty with the 379th Medical Regiment, Organized Reserves, at the Officer's Training Camp, Fort Snelling, Minnesota, July 4th to July 17th inclusive: Floyd Snelson Kidd, Lt. Col. Med-Res., Woonsocket, S. D.; Wallace Isaac Longstreth, Lt. Col. Med-Res., Sioux Falls, S. D.; James Archie Barker, Major Med-Res., Hot Springs, S. D.; Silas Matthew Hohf, Major Med-Res., Yankton, S. D.; John Wallace Brackett, Capt. Med-Res., Belle Fourche, S. D.; John F. D. Cook, Capt. Med-Res., Langford, S. D.; James Gilbert Carney, Capt. Med-Res., Pukwana, S. D.; Paul Vincent McCarthy, 1st Lt. Med-Res., Aberdeen, S. D.; Henry James Toppin Ince, Major Med-Res., Rapid City, S. D.

The John Horsley Memorial Prize was awarded to Dr. C. B. Morton at the commencement exercises of the University of Virginia last month. The prize, consisting of \$1,000, was established in February, 1925, by Dr. J. Shelton Horsley, of Richmond, Virginia, as a memorial



to his father, Mr. John Horsley. It is to be awarded every two years to a graduate of the Medical Department of the University of Virginia for a thesis upon some subject in general surgery, a surgical problem, the solution of which depends solely or in large part upon research in some branch of pathology, bacteriology, physiology, biochemistry or embryology. The subject of Dr. Morton's thesis is "Findings in experimentally produced ulcer: etiologic and therapeutic considerations," the work for which was done in The Mayo Foundation.

#### The Southwestern District Medical Society of North Dakota

This Society held a very interesting meeting at Bowman, N. D., on June 11.

Dr. R. L. Murdy, of Aberdeen, S. D., presented a paper on "The Acute Abdomen"; and Dr. R. L. Mayer, of Aberdeen, presented a paper on "Hydronephrosis," and showed a large number of pyelograms.

J. L. DACH, M.D.  
Secretary

#### The Northwestern District Medical Society of North Dakota

The Society met at St. Joseph's Hospital, Minot. Dinner was served at 6:15.

The following members were present: Drs. Cameron, A. Carr, Devine, Erenfeld, Fardy, Halvorson, Knapp, McGuire, Nestos, J. R. Pence, R. W. Pence, Ransom, Sorenson, Stone, Wheelon, and Yeomans.

Chairman Sorenson reported for the committee on liability suits. He reported having conferred with the heads of both Minot hospitals and satisfactory progress is being made.

##### CLINICAL PROGRAM

Dr. Fardy—Post Arsphenamin Exfoliative Dermatitis.

Dr. Cameron—X-Ray of the Gall-bladder.  
Carcinoma of the Stomach.  
(Treatment of pernicious anemia with liver diet.)

The next meeting will be next Wednesday, June 29, at the Trinity Hospital with dinner at 6:15.

We have been invited to have our August meeting at the Kenmare Hospital. The date will be August 31.

This meeting should bring out those from the Northwest corner of the district which has not been well represented at recent meetings.

ANDREW SINAMARK, M.D.  
Secretary

#### Wabasha County Medical Society

The following is the program of the fifty-ninth annual meeting of the Wabasha County Medical Society, which meets in Lake City on July 7.

##### PROGRAM

President's Address—Our Society. Dr. J. S. Collins, Wabasha.

Perinephritic Abscess, with Illustrative Case. Dr. Wm. P. Herbst, Minneapolis.

Bovine Tuberculosis and Its Relation to Man. Dr. A. S. Anderson, Buena Vista Sanatorium, Wabasha.

The Cults and You—Lantern Slide Illustrations. Dr. Wm. A. O'Brien, Pathologist, University of Minnesota Hospitals.

Report of the Discussion on Immunization against Scarlet Fever and Diphtheria, at the State Sanitary Conference, June 15.

DR. E. H. BAYLEY, Health Officer,  
Lake City

#### PROGRAM OF THE MEDICAL ASSOCIATION OF MONTANA

Wednesday, July 13, 1927

9:00 A. M.

Address of Welcome. Mayor R. W. Kemp, Missoula. Salutation. Dr. G. F. Turman, President Western Montana Medical Society, Missoula.

Response for the Association. Dr. S. K. Campbell, Vice-president, Harlowton.

Report of the Secretary-Treasurer. Dr. E. G. Balsam, Billings.

Address of the President. Dr. F. F. Attix, Lewistown.

Hay Fever in Montana. Dr. A. R. Foss, Missoula. Discussion opened by Dr. Caroline McGill, Butte; Dr. E. D. Hitchcock, Great Falls.

Scientific Treatment of Infantile Paralysis. Dr. L. W. Allard, Billings.

Discussion opened by Dr. Mitchell Langworthy, Spokane; Dr. E. M. Porter, Great Falls.

The Diagnosis of Trachoma. Dr. C. F. Coulter, Great Falls.

Discussion opened by Dr. M. C. Pfunder, Miles City; Dr. J. G. Parsons, Lewistown.

The Effect of Nucleic Acid and Nucleoproteins upon Normal Animals, Experimentally Produced Anemic Animals, and Anemic Humans. Drs. Larsell, N. W. Jones, Nokes and Phillips, Portland, Ore.

The Practical Use of Quartz-lite and of Diathermy. Dr. A. L. Gleason, Great Falls.

Discussion opened by Dr. L. Stevens, Billings; Dr. C. B. Rodes, Butte.

Address—Surgical. Dr. Jabez N. Jackson, President A. M. A., Kansas City, Mo.

The Practicing Physician in Public Health Work. Dr. W. F. Cogswell, Helena.

The Management of Exophthalmic Goiter. Dr. James Tate Mason, Chairman Surgical Section, A. M. A., Seattle, Washington.

Non-luetic Sclerosis of the Central Nervous System, with Report of Cases. Dr. H. W. Gregg, Butte.

Discussion opened by Dr. H. A. Bolton, Warm Springs; Dr. E. A. Welden, Lewistown.

Scarlet Fever. Dr. T. A. Fitzgerald, Missoula.

Discussion opened by Dr. Tom Walker, Great Falls; Dr. E. M. Farr, Billings.

#### Position as Secretary Wanted

A young woman of refinement with splendid qualifications and experience in medical work desires secretarial position in a doctor's office or clinic; capable of assuming responsibility. Several years of experience in clinic work, clerical, book-keeping, etc. A-1 references furnished. Address 365, care of this office.

**Position as Locum Tenens**

Wanted by a graduate of the University of Minnesota now temporarily employed in North Dakota. Address 364, care of this office.

**Locum Tenens Work Wanted**

By experienced physician who is available at once. Graduate of a high-grade medical school. Address 372, care of this office.

**Nurse Wants Position**

A nurse with one year's training wants general day duty in a small-town hospital. References given. Address 374, care of this office.

**Practice for Sale**

In South Central Minnesota, town of 900; wealthy German community; hospital facilities. An excellent opportunity. Address 368, care of this office.

**Physician Wanted**

Iowa location for general practitioner. Little or nothing to buy. For details write Howard-Holt Company, Cedar Rapids, Iowa. Post-office Box 325.

**Laboratory and X-Ray Technician Wants Work**

Does high-grade work in either line. Has had five years' experience in large hospitals. Best of references given and moderate salary accepted. Address 359, care of this office.

**Physician Wants Work**

An experienced physician wants work as an associate, assistant, locum tenens, or practice in an unopposed field. Qualifications and references will give satisfaction. Address 366, care of this office.

**Fine Opening for Physician**

In a good country town in Minnesota. Knowledge of refraction work and speaking German desirable. Wanted as a partner by a physician who wishes to retire soon. Address 357, care of this office.

**Laboratory Position**

A registered nurse who is also a high-grade laboratory and x-ray technician desires a position in a clinic or hospital. Best of references. Position desired in Twin Cities, or will go outside. Address 367, care of this office.

**Practice for Sale**

In county-seat town in western South Dakota. Well-established practice and large territory with little competition. Practice with appointments goes to purchaser of residence property. Address 373, care of this office.

**Office Space for Rent**

Either part or full time, together with a group of physicians in Minneapolis. \$50.00 per month. May pay on percentage of income. Equipped with x-ray and clinical laboratories with expert medical technician. Address 370, care of this office.

**Good Practice for Sale**

Opportunity for general practice in Eastern South Dakota in thriving town. Practice yields \$6,500 cash. One other physician in town. Beautiful residence and office for rent. For price of office furniture and instruments. Am specializing. Will bear investigation. Address No. 374 care of this office.

**Location Wanted**

By a general practitioner of wide experience. Prefer South Dakota. Want a good live town. Address 362, care of this office.

**Laboratory Technician Wants Position**

Have had several years' experience in first-class laboratory and large clinic work, in giving lamp and diathermic treatments, and in office work. Best of references. Address 369, care of this office.

**Specialist Wanted**

Good Eye, Ear, Nose and Throat man and a Pediatricist can find an exceptional good location with old established physician and surgeon and dentist in a city of 25,000. Rent reasonable. All you earn is yours. Address 358, care of this office.

**Specialist Wanted**

Eye, Ear, Nose, and Throat man and an Internist wanted to become associated with a group of physicians in Minneapolis. Complete X-Ray and Clinical laboratories with expert technician. Patients referred. Office expense on percentage of income. Address 356, care of this office.

**Hospital for Sale**

Modern hospital partly equipped; 2-story brick building; 5-room apartment for Doctor; waiting-room, office, operating-room; wards for 12 patients; large porches; in a town 65 miles from Minneapolis. Best of country and good opening for local practice. Price \$18,500.

Location and building are ideal for a sanatorium. Address Walstad-Pearson Investment Co., 534 Security Building, Minneapolis.

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## A SURVEY OF THE GENERAL HOSPITAL OF MINNEAPOLIS

REPORT OF THE HENNEPIN COUNTY MEDICAL SOCIETY COMMITTEE ON GENERAL HOSPITAL SURVEY

This committee was appointed by the president of the Hennepin County Medical Society, following a motion that was unanimously carried at the last annual meeting of that organization. The appointment of this committee arose from a recommendation by the Committee on Health and Hospitals, which had held a special meeting to discuss a proposed increase of the present General Hospital capacity. At this meeting Dr. List, Superintendent of the General Hospital, in discussing the work of that institution, made certain proposals:

First, That the Hennepin County Medical Society put a paid worker into the General Hospital to check up the admittance of patients.

Second, That if the Hennepin County Medical Society would arrange to take care of the people now attending the Hospital Dispensary the Out-Patient Department would be discontinued.

Third, That if arrangements could be made so that the other hospitals of this city would take care of the emergency ambulance cases, he would agree to have the ambulance deliver all these cases to such hospitals.

Fourth, He extended the privilege to members of the Minneapolis Hospital Council of going to the General Hospital and taking out of the institution at any time any patient they were willing to take into their own hospitals.

Following this discussion, the Health and Hospitals Committee recommended the appointment by the Hennepin County Medical Society of a

committee to ascertain the advisability and feasibility of the proposals as outlined by Dr. List. The following committee was appointed:

Dr. N. O. Pearce  
Dr. F. A. Erb  
Dr. A. E. Benjamin  
Dr. L. O. Dart  
Dr. F. G. Benn  
Dr. C. C. Kennedy  
Dr. E. L. Gardner

Dr. Pearce for four years has been chairman of the Hennepin County Medical Society Committee on Health and Hospitals; Dr. Erb, retiring president of the Hennepin County Medical Society; Dr. Benjamin, Chairman of the Executive, long a prominent member of the General Hospital surgical staff and, in the past, president of the Hennepin County Medical Society; Dr. Dart, for many years chief of the B Staff on children and the contagious diseases and present chief of staff of the Contagious Division of the General Hospital; Dr. Benn, present chief of staff of St. Barnabas Hospital; Dr. Kennedy, formerly a member of the Out-Patient Staff of the General Hospital and at present Hennepin County Medical Society representative on the council committee; Dr. Gardner, for many years associated with the General Hospital Medical Staff.

Following the appointment of this committee, the Council Committee of seventeen requested this committee to broaden the scope of their survey so as to furnish them with a report which

would indicate the further needs of the institution. The Committee decided to undertake this additional work, but before proceeding with any part of the survey the matter was placed formally before the Board of Public Welfare, and received their authorization and approval with the understanding that the report of the committee when completed should be submitted to the Board before it should be published or given out to any other organization.

The committee, in assuming this work, felt very keenly and seriously the responsibility of the undertaking. We approached it with no preconceived ideas of what the data collected would bring forth and we fully appreciated the gravity of coming to any conclusion or making any proposal which might influence the progress of the institution to the detriment of any person who is rightfully deserving of its services. Our mental attitude has been, not to study the situation particularly from the standpoint of the medical profession, but from that of a group of tax-paying citizens who by their training, experience, and associations are perhaps particularly qualified for the task. The committee felt that it was no part of its function to consider the question of expansion of the General Hospital on its present site or removal to any other site, and aside from certain data developed expressly for the Council committee of seventeen no matters bearing on this subject have been discussed.

We felt that there were three main considerations:

First, Is the General Hospital completely and unqualifiedly fulfilling that function for which it was created?

Second, Is it now operating up to or beyond capacity consistent with economy and reasonable care of those persons rightly dependent upon it?

Third, Does the past history of growth and present activities of the General Hospital indicate the necessity and economic soundness of planning to increase the hospital capacity in the future in the same ratio it now bears to the population?

We fully realize the impossibility of the task of making a complete survey of the activities of the Hospital and its relationship to the community with the limited time and money at our disposal, and, therefore, we have attempted only to cover certain outstanding phases, assuming that these findings would indicate the general trend of activities.

In general the scope of the work undertaken was:

First, A study of the history of the development of the General Hospital, particularly in relation to the growth of the population and the development of private hospitals.

Second, A study of the legal history and status to determine the legal function of the institution.

Third, An intimate study of the activities of the General Hospital and auxiliary institutions for the past five or six years.

Fourth, A study of all other hospitals and institutions in the city with a view to determine what part, if any, of the present General Hospital population could be cared for by such institutions to the relief of the General Hospital.

In carrying out the above plan each member of the committee assisted by his subcommittee undertook the gathering of data concerning certain phases of the survey. In addition to this an expert credit man, in the person of Mr. Estes, was employed for two months. A committee from the Minneapolis Hospital Council circulated a questionnaire to all the general hospitals of the city, and a subcommittee under the leadership of Dr. Kenneth Bulkley have been presenting to the staffs and managements of the qualified hospitals the proposition of undertaking the care for emergency ambulance cases.

The following pages present the reports and data collected with a summary and certain suggestions:

The three considerations outlined on this page are so intimately related that any discussion of one unavoidably involves the other, so the whole matter lends itself better to general discussion than separately.

The general tenure of all the recent surveys of the General Hospital recognized that the institution is running beyond normal capacity in certain departments and that at a time, varying from the present to ten or twenty years hence, the capacity of the hospital must be increased. However, all the reports available express an opinion based only on the present scope of activities of the hospital and on this basis undoubtedly there is necessity for larger capacity in the near future. However, as pointed out in practically all reports, hospital facilities in Minneapolis are adequate and vary considerably above the average for cities of this class. The growth of hospital beds in the past twenty-five years has been several hundred per cent greater than the increase of population over the same period, and the public hospital facilities have kept pace with private institutions. As pointed out in Graph "A" in Gardner's report the city



hospital population has increased as rapidly as beds were available which is significant and worthy of consideration in any plan involving at this time expanding hospital capacity beyond its immediate needs. Past experience would indicate that any increase in the present capacity would, under the present system, be at once followed by a like increase in population. This is well illustrated by the recent experience in transferring 135 tuberculous patients from Park View to Glen Lake Sanatorium. The beds made available by this arrangement were almost at once occupied by other patients. Other pertinent facts must be considered in the comparative study of growth of public hospital facilities, private institutions, and population, particularly the rapid growth of Glen Lake Sanatorium, which is 92 per cent to 93 per cent supported by tax-payers of Minneapolis. This institution has grown from 50 beds in 1916 to 715 beds in 1927. Of the occupants of Glen Lake Sanatorium in 1926, 463 cases were from Minneapolis and 31 from rural Hennepin. In addition to this, Hennepin County, which means 92 per cent Minneapolis, is providing for the care of 54 tuberculous cases at Walker Sanatorium. Glen Lake Sanatorium, like the General Hospital, fills up as rapidly as new capacity is made available.

If, in considering total charity hospital facilities in Minneapolis, as compared with private hospitals, one should add 92 per cent of the beds at Glen Lake Sanatorium to the present 643 of the General Hospital, Park View, and Lymanhurst, the comparison of increase indicated on Graph "A" is altogether out of reasonable proportion either to private hospital facilities or to the growth of population, and in this connection it is interesting that while our general hospital facilities are generously above the average, our tuberculous hospital facilities, according to Dr. Allen Krause, are almost double what is generally considered adequate for other cities of the same size. Also any study of the comparative capacity of private and general hospitals should take into consideration that many people go to private hospitals as a matter of convenience, rather than of necessity, and also the large number of non-residents who occupy private hospital beds. This should be negligible in the General Hospital.

Relative to the question of the Hospital operating beyond normal capacity, some interesting data developed from the questionnaires to the private hospitals of the first class in Minneapolis.

In answer to the question, what proportion of these beds are continuously occupied, two hospitals reported 75 per cent; one, 85 per cent; two, 85 to 90 per cent; one, 90 per cent; and one, 85 to 95 per cent. The Maternity Hospital reported 72 per cent.

In answer to the question what percentage must be occupied to maintain economic efficiency: This was answered by seven hospitals as 75 per cent and by one hospital as 95 per cent. In answer as to the amount of space desirable for seasonable fluctuation: Two hospitals stated 25 per cent; three hospitals, 20 per cent; one, 15 to 20 per cent; and one, 10 per cent. These answers would indicate that the situation at the General Hospital is not unlike all other hospitals of the same character and that aside from a lack of flexibility (See Engineer's Graph, No. 3) because of the contagious department and the large ward, the General Hospital has no greater problem than the average private hospital and is only running as full as is consistent with economy.

Any study as to the necessity for increasing bed capacity in the General Hospital and auxiliary institutions necessarily involves an analysis of the hospital population; and, further, before an intelligent opinion could be formed and a plan agreed upon it would be necessary to determine the normal function of these institutions.

Included in Dr. Gardner's report is a painstaking study by Dr. Haggard of the history of the establishment and development of the present plan of city hospitalization. Certainly in the minds of the originators, there appears to have been nothing but a plan to provide for the necessary medical and surgical care of those people in the community who were poor and dependent and could not provide for themselves and had no relatives who could provide for them.

Nothing in the history of the institution would indicate succeeding administrative bodies in any way enlarged on the scope of this work except in that the city has undertaken for the protection of the public the hospitalization of certain people who are sick with contagious diseases and, as a humanitarian enterprise, has undertaken to furnish ambulance service and in some instances hospital facilities for emergency cases, therefore the hospital population should consist of:

First, Those members of the community who unquestionably need hospital care and are unable themselves to go to a private institution and have no relatives or other sources of help which make it possible for them to be cared for.

Second, Those people sick with contagious diseases who, in the best interest of the public or because of the seriousness of their own condition, require hospital care. In this group, because there are no private hospital facilities, will naturally be found a large percentage who should in no sense become a public charge.

Third, In this group one should find only those people who are admitted to the hospital because the seriousness of their condition prevents them from being moved elsewhere and those who because of their financial condition fall into the first class.

From time to time, the Hospital administrative bodies have made provision for what has come to be known as the part-pay patient. This idea has been interpreted by the social worker to mean that by allowing the patient to pay something the stigma of being an object of charity is removed, while to the economist the aim is to have every patient pay up to the limit of his ability, thus relieving the tax-payer of the burden to that extent.

However, the part-pay plan should in no way be construed to afford an entrance to this charity institution for any persons but those for whom there is no care available from any other source. Unavoidably the hospital population would be governed:

First, By the number of indigent people in the community in need of hospitalization.

Second, By the popularity of the institution, its good or bad reputation for the care of its inmates, and, therefore, the desirability of going there for treatment; and

Third, By the ease or difficulty of gaining entrance.

There is no question of the popularity of the General Hospital and its auxiliary institutions. It has been sold to the public in a most efficient manner. The reputation of the institution is good. Mr. Estes, in his home investigations and personal interview with patients, reports no single instance of criticism of medical or surgical treatment received.

Under date of October 6, 1926, the City Attorney, in a communication to Dr. List, attempted to define the term "poor and indigent." Apparently, the two words mean practically the same thing, and he states, "Under the law it is the duty of the City of Minneapolis to furnish support or relief to every poor person having a settlement in the city who is unable to earn a livelihood or means of subsistence, but only in case his relatives are not of sufficient ability or

fail or refuse to support him." Just how many persons there are in a city like Minneapolis who would fall within this classification is very difficult to determine. That Minneapolis is to-day furnishing relief in the form of hospitalization to more than a third of the city's entire hospital family would indicate that more than a third of the population are poor. In 1926, 22 per cent of the maternity cases in the hospitals of the city were either entirely or partially taken care of at public expense. That these figures are a true indication of the economic circumstances of our city population depends entirely upon how careful has been the discrimination in the admittance of these people to public relief. In an attempt to determine in what proportion other cities of this class find their population to be poor, nothing of definite value was obtained except that smaller communities of this state find no such degree of public relief necessary. For instance, it is hard to reconcile this amount of relief hospitalization in Minneapolis with the situation in Duluth, a city which in all conditions, except size of population, closely parallels our own. The City of Duluth maintains no hospital for the poor, but free hospital care when necessary is financed by the Community Fund and other organizations. This Fund found it necessary to pay out less than \$17,000 for this purpose last year. The total number of free hospitalization in Duluth in 1926 was 20,342 days as contrasted with 146,365 days in Minneapolis General Hospital alone. The ratio of population in these two cities is about one to four, while the ratio of the relief hospitalization is approximately one to seven and would be much greater if all free hospitalization were considered. What forces are responsible for this wide divergence of what should be a closely parallel situation would in itself make an interesting and profitable study.

The discussion of the third phase of the problem, that is, the admission of patients, involves two major considerations:

First, The standard by which admission is governed, or, in other words, the degree of indigency necessary for a person to be eligible for hospitalization at public expense, and

Second, The consideration of the methods and means by which this established degree of indigency in those persons applying for admittance is determined.

Some attempt has been made previously by Dr. List and later by Dr. Gardner and his committee to obtain information as to standards used in other cities. In the city of Detroit, Mich.,



Dr. Gruber reports each case is handled as an individual problem. "We have no schedule set up as to what the family income should be, nor do we have any hard and fast rules about the situation." In Cincinnati certain standards are used that parallel closely those in use at our General Hospital. Dr. Carter of the Ancker Hospital, St. Paul, reports that they have no definite standard, but pursue the policy of admitting no patient who can afford the services of a private physician in the home or the services of a private hospital. Further, he says: "We have not found an economic schedule for the admission of patients that would work satisfactorily." Cook County apparently has no definite standard, but usually those patients who have property or a salary of over \$100 per month, are not accepted. Jersey City Hospital reports through Dr. O'Hanlon a doubt if any economic schedule that is just to all can be adopted to govern the admission of patients to a municipal hospital. The Philadelphia Hospital does not answer the inquiry clearly enough to give any idea as to what standards they use. Dr. McMillan, of the Cleveland City Hospital, writes that they do not have any definite schedule of income on which to base charges. It would seem from the above advices that the question of admittance of patients on a set standard of income and resources is one that has not yet been successfully solved, and that the application of any set of rules will depend upon the intelligence and the thoroughness with which applicants are investigated.

There is a wide variance in the minds of sociologists as to what represents a minimum standard of living. This varies largely in different localities and according to what particular individual or organization is making the estimate. Studies by different organizations during the years 1917 to 1920 for a family of five persons vary from \$1,267.75 for Fall River, Mass., to \$1,750.50 for New York City; and such estimates can be taken as a guide only to a limited degree. Some attempt was made by this committee to obtain a tabulation of family incomes in Minneapolis, but we were unable to find anything of the kind of city-wide applications.

The United States Bureau of Labor Statistics reports the results of a nation-wide study of the average cost of living, using the family of five as a unit. In these families the average yearly income varied from \$2,141.51 at Bisby, Ariz., to \$1,209.39 at Chippewa Falls, Wis.,

while the average cost of living was \$1,919.40 at Bisby and \$1,167.12 at Chippewa Falls. One of the largest groups of families reported was 240 families studied in Minneapolis and St. Paul. The average income was \$1,432.96 while the average cost of living was \$1,349.98. Approximately 75 per cent of this was spent for the essentials, such as food, clothing, shelter, fuel, and light, the other 25 per cent for such things as medical care, church contributions, recreation, education, carfare, insurance, etc. One of the largest public-utility corporations in Minneapolis has made a recent study of the average monthly earnings of 3,154 employees. 237 in one department averaged \$103.95 per month; 347 in another department averaged \$111.21; 295 in still another department averaged \$98.39. 2,204 averaged \$142.59, and 71 averaged \$126.87, the average for the group being \$131.82. The above probably represents one of the best examples of the average family income of largely unskilled but steadily employed wage earners, and most of these families are respected members of the community. One of the largest department stores furnished a list of wages paid for different classes of employees including salesmen, saleswomen, stenographers, billers, bookkeepers, and other clerical help. The minimum was \$12.00 and the maximum \$18.00 per week. Three years ago a survey was made of the family life of 1,000 children in the kindergarten department of the public schools. This would practically represent a study of 1,000 families. Among other things the income of the family was determined in a very broad sense. 97 families received an income of over \$75.00 per week; 553 families from \$25.00 to \$75.00 per week; 171 families, less than \$25.00 per week, and in 179 families the information was not obtained. Just what proportion of the population would be eligible to free medical service and some degree of hospitalization at public expense as governed by the present so-called standard of admittance to the General Hospital even if rigidly applied is hard to estimate. Undoubtedly, it would be much larger than we generally suppose. A social worker in one of the neighborhood-house clinics which is situated in a district of average workingmen's homes has stated to Dr. Schussler that 90 per cent of the families in that district were eligible for admission to the clinic under the standards with which they were working, which is practically the same as that used in all other free clinics and in the General Hospital. Probably the only reason that our free hospital

facilities have not been hopelessly inadequate in the past is because the greater part of the eligible population have not learned of, or have too much pride to accept, this service. However, the existing situation, as illustrated in Graph A, that the use of free hospital facilities has increased several hundred per cent faster than the population would indicate, that more and more of those eligible are taking advantage of hospitalization at public expense. In all probability this is partially due to the widespread teaching of our social service and welfare organizations, the scope of whose work in Minneapolis has increased even more rapidly than the use of free hospital facilities. Also it is to a large extent due to the popularity of the Hospital, growing out of its good work and the change in name which removed it from its normal status in the community, that of a city-supported hospital for the poor, and made of it a dignified institution where one might go and receive excellent care and treatment with little, if any, expense and without loss of cast in the community. Also to some extent this is due to the fact that while there has been no great change in economic conditions which would adversely affect the earning capacity of the average family in Minneapolis we are experiencing a period of extravagance and overbuying which allows families with the most limited income to buy on a partial payment plan far beyond their normal capacity, and thus adds a large number of people to the eligible list.

In this connection must also be considered the fact that many people are living up to and beyond their means who would otherwise be able and willing to contribute to the care of a sick father, mother, brother or sister. In illustration, Miss Lush stated that many of the old chronics at Park View were parents of children driving automobiles and living in excellent circumstances, but rather than forego any of these luxuries they would impose the care of a sick father or mother upon the tax-payers of the city. She further stated that if Park View were designated as part of the poor farm and known to the public as such, much of this abuse would be remedied.

Further considering the standards of admission to free hospital service, it is difficult to understand the apparently wide variance between the standard of indigency for this form of relief and that governing the giving of relief in the form of food, rent, clothing, fuel, and other necessities. For example, under General Hos-

pital standard a single man or woman is only ineligible if his or her income is above \$105 per month, graduated charge from \$80 per month.

1. Man and wife, ineligible.....\$120  
Graduated charge from \$100
2. Man and wife and one child, ineligible.....\$130  
Graduated charge from \$105
3. Man and wife and 2 children, ineligible.....\$140  
Graduated charge from \$110
4. Man and wife and 3 children, ineligible.....\$150  
Graduated charge from \$115

According to the principles laid down as the normal function of the General Hospital all people falling under the above classification would be considered poor and therefore entitled to public relief. On the other hand, according to the standard of the relief department of the Board of Public Welfare, the maximum living expenses in a family consisting of a man, wife, and one child beyond which they are not entitled to relief at public expense is as follows:

Man—food and clothing, per month.....	\$13.30
Housewife—food and clothing, per month.....	11.80
Child, under 6—food and clothing, per mo. ....	6.70
Fuel and light.....	8.50
Miscellaneous .....	4.00
Rent .....	20.00

Total .....\$64.30

Note that this is less than one-half of the amount (\$130.00) set up by the General Hospital schedule. Further, you may add two children to the family with an additional monthly expense of \$17.95, making a total of \$82.25, as compared with \$150.00 for the same family in the General Hospital schedule.

The \$20.00 per month maximum rental under which relief will be granted, raises the question of the soundness of the policy under the General Hospital schedule of accepting people for free care who hold an equity of considerable amount in homes they are occupying, at an expense for taxes, interest, and deferred payments amounting to many times more than the \$20.00, which is considered a maximum outlay for shelter, consistent with city relief. Certainly, a family with the amount of this equity on deposit in the bank would not be considered eligible for charity.

The present system of admitting patients on a part-pay basis of so much per day is open to criticism in its method of application. It is a fundamental principle that aside from emergency and contagious cases, no person should be admitted to the General Hospital for whom care could be provided in any other way. However,



should it be found necessary to admit a certain patient, it is perfectly obvious that that person's ability to pay can have no direct bearing or relationship to the duration of his stay in the hospital; therefore no plan of charging a patient a certain sum per day can have a sound foundation. The facts involved in the matter of pay are what is the total amount of money that this person can be reasonably expected to have available that may be used for the payment of this necessary service. This estimate of the amount should take into consideration not only the money available at the time of admittance, but also the probable earnings of the next six months, or probably the next year, and that amount should be arrived at, understood; and agreed to by the patient before entrance to the Hospital and charged and collected in a business-like manner. Such a procedure would have a deterring influence on many people who now make use of the Hospital.

In discussing that phase of the subject bearing on the readiness or difficulty of gaining entrance to the institution, it takes only the most casual study to convince one that there is no great difficulty in gaining admittance. The underlying spirit of the whole entrance machinery seems to be, not a question of rightful and deserving entrance, but a willingness to admit practically any one who can establish residence, and then after he is in an investigation of the most simple superficial character is made, not so much with the aim of excluding an undeserving patient as to determine how much or how little he or she should be charged for the service. Obviously such conditions tend to increase rather than decrease the hospital population. Miss Lush stated that nearly all patients were admitted without financial investigation; and, after inquiry had been made, very few were turned away. The burden of financial investigation rests almost entirely upon the Social Service Department, which has for this purpose the service of a director and six or eight young women social workers. Miss Lush stated that most of these girls were young and inexperienced, had no financial training, and would believe anything that was told them. She stated, further, that she had been in the department for two years before she realized that finances were of any importance.

Financial investigation of the kind necessary properly to determine the eligibility of a person applying for public relief is out of place in a social service department whose personnel is

neither temperamentally nor by training fitted to carry it out. Financial investigation, except in emergencies, should be accomplished and eligibility established before the applicant is accepted. Such inquiries should be as thorough and complete as that made in connection with any other application for public relief and should include information as to income, size of family, current expenses, obligations, and the financial ability and willingness of relatives to pay. All information should be verified and illuminated by home visits and interviews with relatives and employers. If there is a family physician he should be consulted. This is substantially the method in use at Duluth where free hospitalization is so much lower in proportion than in Minneapolis. Contrast this method with that in vogue at the General Hospital, where six or eight workers devote only from one-eighth to one-fourth of their time to an inquiry bearing on eligibility and this investigation after the person has become domiciled in the institution; a bedside interview in which the underlying spirit is always one of service to the patient. The aim of this department is to help every individual, and it is not a broom to sweep the Hospital of those not belonging there. A non-resident may have no right to care in a city institution, but the hospital social worker sees a human being in need of medical attention and must provide for the same. According to Mr. Estes' report, investigations as carried out are inaccurate and inadequate. There are practically no verifications of statements made and apparently little effort to determine the possibility of care by relatives. Of those cases looked up by Mr. Estes 10 per cent were unknown at the address given, in 6.5 per cent there was no such number in the city, and in one case the person had never been to the Hospital. One cannot read the report of Mr. Estes' investigation of cases without a feeling that there is much imposition upon the already over-burdened tax-paying members of the community.

A further illustration of the impotency of the existing system is brought to light in Mr. Estes' report of the accounting department, where charges for the year of 1926 were recorded to the amount of \$49,640.39 with collections only to the amount of \$19,853.51 and the method of handling the collection of this fund discloses in spirit the same lack of aggressiveness as is found in the admittance department. Mr. Estes felt that on the basis of the survey he had made the standard of admission and the system of application resulted in the admittance of at least 20

per cent of ineligible.

Conditions governing the admittance of patients to the free dispensary closely parallel those of the Hospital except that here the patient is interviewed at the time of registration and his statement accepted without further verification. With a fine sense of discrimination the interviewer arrives at the conclusion as to whether the applicant is entirely destitute or solvent to the extent of 20 cents, which he or she may be required to pay at each visit. However, in order that there may be no injustice done if the 20 cents is not forthcoming after three or four visits the charge slip which has been attached to the record is destroyed. It is of course hard to estimate how many ineligible people are taking advantage of this service, and we know of no method of ascertaining except strict investigation and recording. Some little light is thrown on this question by the fact that it is estimated by the receiving agent that 30 per cent of the patients are of a certain race, while according to the best statistics available the population of that race is less than 20,000, or less than 5 per cent of the total population. This discrepancy of less than 5 per cent of the population furnishing 30 per cent of the patients is illuminating.

Little so far has been made of the point that relief hospitalization should be granted only when hospital care is unquestionably necessary. No attempt was made to study this phase of the question except in the obstetrical cases. Mr. Smith, in his report of the personal investigation of all the patients domiciled in this department on a certain day in February, stated that of the 48 maternity cases in the Hospital, 45 of them should have been delivered in their own homes, and he comes to the further conclusion that if only those cases with expected complications were taken into the Hospital for delivery, a ten-bed maternity ward would be sufficient. The general hospitalization of maternity cases has reached a very high level in Minneapolis, but the hospitalization of the perfectly normal case is a luxury for the patient and a convenience for her physician, and in such normal cases adds nothing to the safety of the mother or infant. Statistics furnished by the Health Department show that the maternal mortality rate in spite of this wide hospitalization has shown no appreciable decrease; in fact, in 1920, with 60 per cent of the obstetrical cases cared for in hospitals, the maternal mortality rate was 6.8 per cent, as compared with 1926, when 75 per cent of the confinements were in hospitals, with a maternal

mortality rate of 8 per cent. In 1925 there were 45 maternal deaths in 6,838 hospital deliveries, as against 8 deaths at home in 2,585 deliveries. In 1926 there were 6,927 hospital deliveries with 69 maternal deaths and 2,265 cases at home with 5 deaths. We might assume that the fact that all of the complicated cases go to the hospital would explain this discrepancy, but as a matter of fact the statistics show that of the eight deaths in the home, two were cases that had been delivered in the hospitals, two were due to accidents of pregnancy, one to an accident of labor, and one to albuminuric convulsions, and two to puerperal infection, while eighteen cases, not counting the two taken home, died in the hospital from puerperal infection. In 1926 only one case died from puerperal infection at home, while thirty-four lost their lives as a result of it at the hospitals. With the prenatal clinics to detect those in need of hospital care, the excellent visiting nurse service for maternity cases and plenty of young competent physicians willing and anxious to attend these women for a fee commensurate with their circumstances, there seems no good reason why the City should assume the burden of their care. This type of case occupies valuable space and creates an expense to the tax-payers of many thousands of dollars.

This discussion would be incomplete without reference to the matter of private hospital care for any part of this hospital population. The questionnaire to the private hospitals disclosed that there are 754 beds available at \$3.50 or less per day, exclusive of beds for new-born; that the per diem cost ranged from \$2.79 at Maternity Hospital and \$2.91 at the Deaconess to \$5.81 at the Eitel. Two other large general hospitals quoted less than \$4.00 per day. There are slightly fewer nurses per patient at the General Hospital, but on a basis of total employees and nurses in all hospitals, the ratio of one to one is maintained as in other hospitals.

Members of the staffs of all private hospitals have signified their willingness to care for patients who are able to pay only the hospital bills; likewise the hospitals signify their willingness to grant reasonable credit to patients and to make special rates in case of necessity. Dr. Bulkley's committee has presented to the hospital staffs a scheme of rotating emergency ambulance cases to the private hospitals. The staffs of all the major hospitals, with one exception, agreed to undertake the care of these cases regardless of their ability to pay. The committee is at this time submitting plans to the administrative



boards of these hospitals with a view to organizing this service. If it can be arranged it will do away with a type of compensation case which has no place in the General Hospital, save the city a very considerable expense, and make many beds available.

In conclusion, this discussion is based upon the fundamental fact that a city government is neither philanthropic nor altruistic in its provision of relief and care for the poor; that this is a burden on the tax-payers and one in which there can be no pride or sentiment involved. No city has reason to be proud of its poverty-stricken population, and neither can it take pride in the necessity for building large institutions for their care. The unqualifiedly deserving poor in a city like Minneapolis are few in number. Their indigency is a result of their own indiscretion and lack of diligence. The squalor of their environment is a thing of their own making and they would improve upon it themselves had they the desire or intelligence.

#### CONCLUSIONS

The Committee feels that, in view of the data collected in this survey and the considerations discussed, the following conclusions are a true representation of the situation:

1. That the General Hospital has assumed a function and a dignity in the community which is not consistent with its normal character, which was never contemplated by its creators, and which is not in accordance with the intent of the laws governing its existence, and which has imposed an unnecessary burden on the tax-paying part of the community.

2. That, under the present standard for indigency as used for admission to the Hospital and Dispensary, an unreasonably large part of the population would be eligible to free care.

3. That the present methods of investigation of persons in inadequate and inaccurate and encourages the use of these facilities by many persons who are not entitled to public relief.

4. That an appreciable number of people are now admitted who do not necessarily require hospital care.

5. That the present system of computing obligations of the part-pay patient is unsound and

based entirely on inadequate information.

6. That the present congestion in the Hospital is due to some extent to the presence of patients not entitled to service in a charity institution.

7. That many beds are available in other hospitals at as low, or lower, cost than the present per diem at the General Hospital, and that it would be economy for the city to pay for necessary care in other institutions rather than to increase the present General Hospital capacity.

8. That it is impossible to estimate or predict either the present or future needs of the General Hospital until a thorough system of investigation of applicants and a better scheme of indigency has been established and in operation for at least two years.

Therefore, it is recommended:—

- A. That the Board of Public Welfare be requested to establish an "admitting and collection department" for the General Hospital and auxiliary institutions, this department to be in charge of a trained financial investigator and credit man who will have complete control of the eligibility of all persons making application for hospitalization or treatment at public expense and be responsible only to the Board of Public Welfare.

- B. That an Advisory Committee be created, composed of one member of the Board of Public Welfare, one member of the Hennepin County Medical Society, and one member from the Minneapolis Tax-payers' Association; this Committee to meet twice a month with the admitting officer for the study of questionable and borderline cases with a view to developing satisfactory rules for his guidance.

- C. That the Board of Public Welfare consider the advisability of changing the name of the General Hospital to one which will convey to the public its true character and place in the community.

- D. That the Board of Public Welfare co-operate and do all in its power to facilitate and make possible the present proposed plan for a rotating private hospital service for emergency ambulance cases.

- E. That in principle the same standards of indigency should govern financial, hospital, and medical relief of the poor.

# EXTRAPLEURAL THORACOPLASTY FOR TUBERCULOSIS, WITH PRESENTATION OF A CASE\*

By R. C. MURDY, M.D.

ABERDEEN, SOUTH DAKOTA

I have selected the subject, "Extrapleural Thoracoplasty for Tuberculosis," for this paper because I have been interested in the reports of these cases that have appeared in the literature more and more of late, and because at this time I am able to present a case which has appeared to me peculiarly to illustrate the good results to be obtained in the surgical treatment of this small but definite group of cases by this method, that is, by extrapleural thoracoplasty.

As I wish to confine my paper to the bare outline of the one procedure for the one condition, I am purposely going to omit the relative merits of pneumothorax, resection of the phrenic nerve, thoracotomy, apicolysis, and all the other surgical procedures for pulmonary tuberculosis, and I shall not speak of extrapleural thoracoplasty in connection with non-tuberculous disease.

In December, 1907, an internist at Marlberg, Germany, by the name of Brauer persuaded his colleague, Freidrich, to do the first extrapleural thoracoplasty for tuberculosis. It is needless to say that the operation done by Freidrich has been greatly improved, but it is interesting to know that it was his assistant, Sauerbruch, who has perfected and done more thoracoplasty operations than any other surgeon, and it is his method that is largely used by American surgeons.

While approximately two thousand thoracoplasties have been done in Europe, especially in Germany, Switzerland, and Scandinavia during the last twenty years, the procedure is comparatively new on this continent and especially in the United States. Archibald, of Montreal, in 1912, performed the first thoracoplasty on this continent. In a recent paper he says that it is fair to state that, in general, practitioners, internists, and surgeons are still unfamiliar with the fact that certain cases of tuberculosis (pulmonary) which are otherwise hopeless, are curable by this means: (1) The cough and sputum are abolished; and (2) the pulse and temperature are normal, and the patient is able to do a day's work.

The Sauerbruch operation, which is now the standard extrapleural thoracoplasty, was first

used in 1912 and is a modification of the Wilm operation.

Important in treatment of these cases are co-operation of the internist with the surgeon and close pre-operative and post-operative attention. There are estimated to be approximately 15,000 to 30,000 cases of pulmonary tuberculosis in the United States that are suitable for this procedure, or about 5 per cent of the total number of cases (pulmonary tuberculosis). These are all doomed without thoracoplasty. Any skilled surgeon can perform this operation with the co-operation of a good internist. The risk is not as great with as without operation. This possibility should make us hopeful in all pulmonary tuberculous cases, as we may find a case that may be salvaged. All advanced cases of pulmonary tuberculosis should be x-rayed with this possibility in mind. Of the cases having positive sputum and treated by other than surgical means, of the moderately advanced cases followed one to five years, 38 per cent die; of the same type only more advanced 71 per cent die.

In a recent series Zeigler did 86 thoracoplasty operations without a death in the uncomplicated cases. A local anesthetic was used.

Indications for operation:

1. Lung involvement, unilateral or practically so.
2. A certain degree of chronicity, medical treatment having been tried without cure.
3. Fibrosis or cavitation of the lung.
4. Cases impractical for a pneumothorax due to the time element or adhesions or after a course of pneumothorax has failed to cure or arrest. Fixation of the mediastinum is necessary to successful operation, and the age limits for the patients for this operation should be fifteen to forty-five.

Contra-indications to operation:

1. Extensive involvement of the other or the so-called good lung.
2. Advanced myocardial disease or other serious systemic diseases such as cirrhosis of the liver or renal disease.

Operation consists of incision parallel with, and three inches lateral to, the spine and the subperiosteal resection of the upper 10 or 11

\*Presented before the Aberdeen District Medical Society.



ribs, taking two to fifteen centimeters of each rib near the vertebral end, beginning with the 11th and going upward. The two or more stage operation of Sauerbruch is now conceded to be the best procedure, the operations being about two weeks apart. Each stage is completed, taking a portion of two to six ribs.

With regard to the anesthetic: European surgeons use largely ether or chloroform or a combination of these. In this country a local anesthetic, or a local anesthetic combined with gas and preceded by a hypodermic of morphine, 1/6, and scopolamine, 1/200, is the choice.

The purpose of the operation is to bring about rest and compression. There is a reduction of about 50 per cent in the capacity of the side of the thorax operated on. The absorption of toxins through the lymphatics is stopped, and this accounts for the rapid reduction in fever and pulse.

Results: All factors being considered practical cures outweigh risks, as these patients are selected for their hopelessness to other means of treatment. In round numbers the percentages following this operation by all operators combined are 30 per cent cured, 30 per cent improved and 37 per cent deaths. Sauerbruch's results are better.

Disadvantages of operation are: Irreversibility, permanence, mutilation, and deformity. These factors are of very minor importance in comparison to the results to be expected by non-surgical treatment in this group.

CASE 1.—Mrs. Mabel Raven, aged 38, has been under my care since July 19, 1926.

Family history is negative except one brother dead of tuberculosis at the age of 23, and one brother died from anemia at the age of 16.

Married fourteen years, husband died from tuberculosis twelve years ago.

One child died of pneumonia.

Menstrual history, negative.

Present trouble began about nine years ago with cough, fever, and pain in upper left chest. She was confined to bed for four months and at this time her temperature ranged between 101° and 104°.

There was considerable sputum which was often blood tinged. Following this spell she was improved for a couple of years and then had a slight hemorrhage. At two other times, about a year apart, she has been in bed for three or four weeks at a time with the same symptoms as in the first instance and with numerous tubercle bacilli in the sputum each time. After a period of comparative freedom from serious illness, she has been in bed most of the time for the past four months and has increased somewhat in weight. She has not been free from fever more than a day at a time during this period. Her cough has been better and then worse, and sputum examinations have always been positive for tubercle bacilli.

Physical examination: Negative except for chest condition; heart rate, 90 to 100; temperature, 99° to 101°.

Tubular breathing and all kinds of râles over left apex, which is dull to percussion. Râles and distant breath-sounds along left spine and over base. Right apex, some râles and restricted breathing. X-ray shows cavitation in left apex and active lesion along spine and into left base. Active lesion to less extent in right apex.

Operation: First stage October 10, 1926, after a period of rest in hospital. Two and a half to three inches of 2d, 3d, 4th, 5th, and 6th ribs were resected subperiosteally near spine, left. Second stage October 28, 1926. Two and a half to three inches of 7th, 8th, 9th, 10th, and 11th ribs were resected subperiosteally near spine. Local anesthetic of novocaine 1 per cent with some ethylene gas. Operation was preceded by hypodermic of morphine, 1/6, and scopolamine, 1/200, given 45 minutes before operation.

Post-operative condition: Operation was completed practically four months ago. She has gained about twenty-five pounds in weight. She feels well, and her sputum has decreased to almost nothing. From almost a pure culture at the time of her operation the tubercle bacilli in the sputum had decreased to one for every twenty-five fields, February 1, 1927, and one for every fifty fields March 3, 1927. She is not cured and it cannot be said, as yet, that the disease is arrested, but she is greatly improved. She has been so much improved that she is inclined to overdo.

The patient is shown here to demonstrate the amount of deformity of the chest and her apparent well being at this time.

## PRINCIPLES IN QUARTZ-LIGHT THERAPY\*

By MATTHEW S. HOSMER, M.D.

ASHLAND, WISCONSIN

Sunlight is composed of waves of various lengths, and the lengths decrease from red to violet. Beyond the red and violet of the visible spectrum are rays which are invisible. These

\*Presented before the Seventeenth Annual Meeting of the Minneapolis, St. Paul & Sault Ste. Marie Railway Surgical Association, at Chicago, Illinois.

are the infrared at the left of the red and ultraviolet at the right of the violet. The long-waved red and infrared rays diffuse heat and penetrate deeply. The short-waved violet and ultraviolet rays give no heat, are easily absorbed, and do not penetrate deeply. The action of the ultra-

violet rays upon living tissues is not clearly understood, but they do improve nutrition. They aid in the development of antibodies and in the destruction of bacteria.

Finsen states that the capillaries in the skin absorb most of the active rays. Therefore, through the blood stream every tissue in the body can be influenced.

Four years ago we began treating our cases of joint tuberculosis with a regular daily exposure to the rays of the sun with decidedly beneficial results. We were handicapped in this work by two factors:

1. The sun does not always shine.
2. The ultraviolet rays of the sun are absorbed to a very large extent by the atmosphere.

With the advent of the quartz lamp we were provided with a constant means of securing these rays in definite quantities. The technic is very simple, and, if the patient's susceptibility is studied, is free from danger. The part to be treated is exposed, the rest of the body being draped by towels. The first treatment consists of a three-minute exposure at twenty inches. The succeeding treatments are prolonged three minutes each until a maximum exposure of thirty minutes is reached. The treatments are given every second, third, or fourth day, depending upon the amount of improvement and the susceptibility of the patient. Four to six hours after the first treatment the patient notices a tingling and burning, with redness of the skin, followed by a tan, which becomes more marked with each treatment. A primary treatment of more than three minutes is liable to be followed by a painful sunburn. This, however, does not result in any lasting injury, such as might be produced by the  $x$ -rays.

Plank, of Chicago, says: "The use of the ultraviolet light, as delivered by a quartz lamp, may be summed up, in the main, in the treatment of infections and the destruction of the cuticle and of foreign growths. Theoretically, I feel sure that much of the benefit derived in chronic cases is due to the improved blood stream. Just how it is improved has not yet been determined, but it is known that these rays are readily absorbed, and the blood passing through the capillaries doubtless absorbs most of them."

The red and all lower frequencies are eliminated, so that any benefit accruing must come from the higher frequencies, which, unlike the red rays, do not produce a deep capillary dilatation. While radiant light may have as great a power to increase metabolism or to assist in the

removal of waste product, it has less power to destroy micro-organisms than the actinic or non-luminous rays. It is to be hoped that in the near future some method may be devised whereby we shall be able to determine the exact action of these rays upon the living tissues of the body.

Ochsner stated that light will relieve pain and congestion better and more quickly and will do more to combat infection, either local or general, than anything else known to medical science. Neiswanger says, in his book, that "Therapeutic light is indicated in more classes of cases, will do more general good, requires less technical training properly to apply, is the most efficient and economical of electrical modalities."

Plank, in a recent book, reiterates the statements of many predecessors that light is the best single method we have for relieving congestion, pain, etc., stating that he often succeeds even in pus cases, and that light has a decided tonic effect, creating a general comfort, a sense of well-being and stimulating nutrition.

No other physical remedy has ever found its way so rapidly into general favor. Its benefits are quickly and easily shown to any observer.

It has been shown by Quinche that hemoglobin gives off oxygen more quickly in the light than in the dark. According to Moleschott, carbon dioxide is eliminated in direct ratio to the intensity of light.

#### THE ACTION OF LIGHT

*On the skin.*—It has been well said by Pratt: "Any agent that flushes capillaries is remedial." Light is of value in protecting the skin against invading parasites. It makes the skin firmer. One may observe the following:

1. Pronounced dilation of both superficial and deep cutaneous blood vessels.
2. Migration of the leucocytes.
3. Increase in number and activity of tissue cells.
4. Swelling of the collagen.
5. Thickening of the rete mucosum.
6. Hyperplasia of the epidermis.

*Light and hyperemia.*—Artificial hyperemia is of value, for by early increasing inflammatory signs, a beginning infection oftentimes can be made to subside. Abortive treatment of phlegmons, furuncles, etc., is rapidly gaining favor. No claim is made that we can suppress every infection before pus is formed, still there is no question as to our ability to avoid suppuration in a larger percentage of cases than by any other known method. When suppuration is unavoid-



able or has already set in, we are able to treat successfully with smaller incisions.

*On cutaneous circulation.*—Portions of skin habitually exposed to light show a marked activity of the circulation.

*On the blood.*—According to Quinche, hemoglobin gives off oxygen more quickly in the light than in the dark. In prolonged darkness rats show a reduction in the number of red cells, the amount of hemoglobin and the total quantity of blood. Borrisson showed increased appetite and considerable gain in weight among dogs left in the light, while those left in darkness showed no gain. Finsen examined microscopically the body of a tadpole while exposed to the light and noted dilation of the capillaries, slowing of the blood stream, contraction of the red cells, and migration of the white cells,—phenomena similar to those observed in inflammation.

*On bacteria.*—Too much attention cannot be given to the important effects of light on bacteria. Light has a detergent action upon fungi. River water which showed 520 bacteria per c.c., after exposure to sunlight for sixteen hours showed only five bacteria per cubic centimeter. It has been shown that light, by increasing leucocytosis, phagocytosis, and oxidation must be of great indirect bactericidal value. Children who are frequently exposed to light are much less subject to anemia, tuberculosis, rickets, and other constitutional disorders.

Briefly stated light:

1. Increases local activity by promoting elimination.
2. Increases local and general perspiration.
3. Softens and re-establishes circulation in scar tissue.
4. Improves the nutrition.
5. Relieves pain.
6. Increases oxidation, local and general.
7. Produces leucocytosis.
8. Raises the hemoglobin.
9. Relieves stasis.
10. Has an action on the vasodilators.
11. In acute or subacute infectious conditions, increases hyperemia, phagocytosis, absorption, and elimination.

#### GENERAL DIRECTIONS

All covering should be removed from the parts. The best results will be obtained if the patient lies comfortably in a quiet room. Left alone, the average patient will go to sleep, thus securing complete relaxation.

For systemic treatment, bare the patient's en-

tire body or at least to the hips. The lamp should be no farther away than to permit the rays to cover the area.

#### DISCUSSION

DR. CLARK C. POST (Barron, Wis.): From a surgical standpoint a carbuncle should, of course, be incised and the area cleaned and drained. Following the operation, further treatment would be necessary. It would probably be advisable to use the  $x$ -ray once only. But the ultraviolet light should supplement this treatment. The ultraviolet light is germicidal and also toughens the skin so that larger doses of  $x$ -ray can be used. The ultraviolet ray relieves pain better than does the  $x$ -ray. Therefore, the ideal treatment of a carbuncle would be, first, incision and drainage, followed by  $x$ -ray therapy, one exposure, and after that daily treatments with ultraviolet rays. In deep infection one would use the quartz lamp, with pressure for about two minutes.

DR. PETER J. CHRISTOFFERSON (Waupaca, Wis.): I would like to ask some of the members if they have ever discovered that when the light is focused correctly on the part to be treated, there is a white light on the outside; and in the center a purple light a little larger than a dollar. The conclusion I have arrived at after several years' experience with this method is that when we have a slanting light at the focus we fail because the purple ray does not reach the part, whereas in making a straight focus we get the purple light.

DR. GEORGE M. STEELE (Oshkosh, Wis.) We have had some experience in treating carbuncle with  $x$ -ray. Some fifteen years ago, at a meeting of the Roentgen Ray Society, this remark was made: "In the case of a carbuncle do not forget the  $x$ -ray, for carbuncle will be made a simple thing if treated with  $x$ -ray early."

An illustrative case is that of a carbuncle on the neck seen a week after the onset. There was a good deal of disintegration and multiple openings. The process was rapidly extending, and there were systemic symptoms. With the first  $x$ -ray treatment the patient began to improve. He received only one more treatment and then went to work, entirely recovering.

DR. JOHNSTON (Abbotsford, Wis.): As Dr. Christofferson said, we must get the technic, we must get this purple center. Years ago carbuncles were treated by poulticing. Then the treatment changed to crucial incisions. To-day our treatment of carbuncle consists of focusing this light on it. In a few years the quartz lamp will be discarded in favor of the solar arc lamp. In the use of the solar arc lamp the principal failures that I have had have been in cases of old chronic arthritis. In my work I use a cheap, every-day solar arc lamp, such as is used at Battle Creek, and I get results.

DR. HOSMER (closing): Preliminary to treatment with the rays all purulent conditions should be drained. While in some cases of tuberculosis one can get results by this treatment, one would not attack an acute pulmonary tuberculosis with either light. After the patient improves he might be given the general treatment with light.

## PROCEEDINGS OF THE MINNEAPOLIS CLINICAL CLUB

Meeting of April 21, 1927

The regular monthly meeting of the Minneapolis Clinical Club was held at the Elks Club on Thursday evening, April 21, 1927. Dinner was served at 6 P. M., and the meeting was called to order by the President, Dr. J. M. Hayes, at 7 P. M.

The minutes of the March meeting were read and approved.

Dr. S. R. Maxeiner read a short sketch of the life of Dr. F. J. Souba, and the following resolution was passed:

Dr. Frederic J. Souba was a charter member of our Minneapolis Clinical Club and is the first member whom death has taken from our midst. Therefore, be it resolved that

We, the members of the Minneapolis Clinical Club, express to Mrs. Souba and her children our appreciation of him as a colleague and a member of this Club and our sympathy in their sorrow; and that a copy of this be spread upon the minutes of our organization.

The scientific program of the evening consisted of the following:

Dr. C. A. Boreen gave a lantern slide talk on various types of skin lesions:

As I have a large number of slides to show I will pass over some of them hurriedly and discuss some of the interesting cases more in detail.

- 1, 2, 3, and 4 are basal cell type of epitheliomas.
5. Squamous cell epithelioma of the lip.
6. Dermatitis artefacta. The lesions in this case were probably produced by some inorganic acid.
7. Herpes zoster gangrenosa.
8. Scabies.
9. Lichen planus.
10. Syphilis. This case somewhat resembles Lupus erythematosus.
11. Actinomycosis.
12. Acute disseminated lupus erythematosus. The prognosis in this case is very grave. Almost without exception these patients die.
13. Erythema multiforme—Iris type.
14. Impetigo bullosum.
15. Late syphilis resembling lichen planus.
16. Late secondary syphilis. Condylomata lata.
17. Favus scalp. In this country favus is seen almost entirely among the Russian Jews. The only treatment in these cases is epilation with the x-ray and follow this with some anti-parasitic application.
18. Nodular leprosy. Curative results have been reported in incipient cases with ethyl esters of chaulmoogra oil. I have had an advanced case under my care for a number of years, but she has been steadily getting worse.

19. Malignant melanoma. This case is a University student. He had a deeply pigmented mole on the upper left arm. The mole began to ulcerate

about ten months before the time I saw him in April, 1926. History brought out the fact that the mole had been irritated by a short-sleeved starched linen coat. About a half inch from the ulcer was a dark-blue nodule. A diagnosis of melanoma was made and the lesion was excised by wide incision and going deep into the muscle. A biopsy report by Dr. Bell of the University stated that it was malignant melanoma. Since that time the patient has received twelve deep x-ray treatments over the axilla, neck, and chest. I saw him six weeks ago and found no evidence of metastases at that time. Most of these cases, I believe, are melanocarcinoma rather than melanosarcoma. The prognosis is very grave. They usually develop generalized metastases within three years.

20. Lupus vulgaris. A lesion about the size of a dollar on the right cheek. The lesion has been present for thirty-eight years. The patient is being treated with acid nitrate of mercury.

21. Fungus infection. The patient is a female 52 years old. She has had the present condition for several months. There are numerous scroll-like lesions involving the upper chest and arms. Many of the lesions are ring-shaped, scaly and somewhat infiltrated, giving a picture similar to tinea imbricata. The latter disease, however, is found only in tropical countries. The question of diagnosis was between fungus infection and syphilis. Her past history was a little suspicious of syphilis. The Wassermann was negative, and the microscopic examination for fungus was also negative. No cultures were attempted. She was treated with one-half strength Whitfield ointment, and her condition cleared up within six to eight weeks.

22, 23 and 24. Keratoderma palmaris et plantaris hereditaria.

No. 22. A young woman, University student, with marked hyperkeratosis of the palms and soles. The lesions were sharply demarcated on the backs of the fingers and toes. There was rather profuse hyperidrosis. The palms resembled the appearance of monkey paws. I have traced the condition through three generations.

25. This slide shows the hands of five members representing the three generations (22). As yet I do not know whether this condition comes from the male side or the female side of the family. Zeisler reports a family tree of nineteen cases descending from the male side. On the basis of endocrine disturbance, Mason treated an infant with pluri-glandular extract and reported an apparent cure. The same treatment of the mother had practically no effect. I have started this treatment in Case No. 22, but as yet I have seen no change. The treatment, however, was started only two weeks ago.

## DISCUSSION

DR. TURNACLIFF: It is rather difficult even to attempt to discuss this talk as there were so many different types of cases shown. The last case presented (keratoderma in five generations) was exceedingly interesting. The one with the scroll-like



lesions on the chest certainly is not syphilis with the response that it has shown to treatment and the appearance of the lesions themselves at the time the case was shown before the Dermatological Society.

DR. E. D. ANDERSON: So often you see a little mole on children. Can or should anything be done about them?

DR. BOREEN: I think I would leave them alone because very few moles undergo malignant changes. The majority of cases I would leave alone; very few become melanoma.

DR. ANDERSON: In case the mole grows a little larger and then apparently stops, would you do anything?

DR. BOREEN: Some of those disappear spontaneously.

DR. BEARD: Are they apt to become malignant if left alone?

DR. BOREEN: I do not think so. Of course, if they are in a place where they are going to be constantly irritated, it is best to remove them. I think that is the cause of the degeneration.

DR. MCCARTNEY: It is not so much the color of the mole, but the location; particularly moles on the soles of the feet give the most trouble. The amount of pigment does not make so much difference.

DR. MAXEINER: In connection with melanocarcinoma, or malignant melanoma, Dr. Allison will probably recall one case which he treated for me by x-ray. This woman had a primary mass on the lobe of the ear which was widely excised. Dr. Bell gave a fatal prognosis upon examination of the sections. Later she had metastases in the cervical glands and then numerous black nodules in the skin, particularly of her back. She lived about three years. Her demise came from hemorrhage due to metastases of the bowel.

Dr. Archie Beard gave a case report and presented a patient with a skin lesion involving the left thigh.

Dr. Paul Giessler read a report of a case of Ollier's disease, and presented the patient, a boy eight years of age. Numerous x-rays of the case were shown.

Dr. S. R. Maxeiner gave an additional report on a case (reported at December, 1926, meeting) of pernicious anemia treated with mercurochrome.

As you remember, I presented at a previous meeting a case of pernicious anemia which had improved so markedly with mercurochrome. This patient improved rapidly and continuously, and his hemoglobin rose from 28 per cent to nearly 60 per cent. He became suddenly ill about a week ago and died from an attack that was apparently bronchopneumonia. I was unable to obtain an autopsy.

Dr. W. A. Fansler read the paper of the evening, entitled "Non-malignant Tumors of the Rectum." Lantern slides were shown.

The meeting adjourned.

H. M. N. WYNNE, M.D.  
Secretary

## BOOK NOTICES

A MANUAL OF PHARMACOLOGY AND ITS APPLICATION TO THERAPEUTICS AND TOXICOLOGY. By Thorald Sollmann, M.D., Professor of Pharmacology and Materia Medica in the School of Medicine of Western Reserve University, Cleveland. Third edition; entirely reset. 1,184 pages. Philadelphia and London: W. B. Saunders Company, 1926. Cloth, \$7.50 net.

This book\* is a very complete and careful treatise on drugs, giving the source of supply, action, use, and physical characteristics. There are chapters on toxicology, prescription writing and pharmacologic methods. It is a very complete and concise work of great value to students as a text-book and to practicing physicians as a reference book.

—W. W. MOIR, M.D.

INTERNATIONAL CLINICS. A quarterly of illustrated clinical lectures and especially prepared original articles on medicine and surgery. Edited by Henry W. Cattell, Thirty-seventh series, 1927. Vol. 1; 304 pages, illustrated. J. B. Lippincott Company: Philadelphia and London.

This volume contains the most recent conclusions of the best teachers in the investigation and the treatment of practically all diseases from paresis to cancer of the gall-bladder, and from temperature in the new-born to vaccine treatment of gonorrhea. It is absolutely up to date and is of interest to all doctors.

—W. W. MOIR, M.D.

THE SPECIALTIES IN GENERAL PRACTICE. Compiled by Francis W. Palfrey, M.D., Instructor in Medicine at Harvard University in collaboration with fourteen other teachers of Harvard Medical School. Octavo of 748 pages. Philadelphia and London: W. B. Saunders Company, 1927. Cloth, \$6.50 net.

This is a book of about 700 pages which attempts to cover eleven different specialties. What the authors have to say is concise and very much to the point. Lack of space forces them to leave out all but the bare essentials. In this state no one would be allowed to practice who did not already know all that is in this book. It is quite useless as a text-book for students, for no subject is completely covered. The compiler makes the mistake, which most specialists who have never done a large general practice make, of trying to tell general practitioners what he thinks they ought to know without realizing that if they did not already know much more about all these subjects than this book tries to tell them they could not carry on their practices.

—W. W. MOIR, M.D.

# THE JOURNAL-LANCET

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## REPORT OF THE SURVEY COMMITTEE OF THE MINNEAPOLIS GENERAL HOSPITAL

This committee report appears in the present issue of THE JOURNAL-LANCET, and although it seems like a long report it is not. It is a general résumé of all the committees that were appointed, that is, out of the Hennepin County Medical Association there were approximately thirty-three men who conducted the investigation, or the survey, and from this body one man was selected from a committee to draw up his report on whatever work he had undertaken. And the present report of the survey is an analysis and a condensation of all the reports submitted. The report as a whole covered two hundred pages, so that one may understand the enormous amount of time which was given to this investigation.

The outlines of the inquiry are reported by Dr. N. O. Pearce, who was chairman of the general committee and by whom this paper was prepared. The conclusions that the committee reached give one a general idea of what they found and what they decided upon. It will probably help to define, if such a thing is possible, the character of the patients who should be admitted into the Minneapolis General Hospital or any other general hospital anywhere. The

greatest problem is to decide who is to be considered an eligible person for a city's care in a hospital, and it is very difficult to draw a horizontal line which will protect two classes, one of whom is able to pay and pays taxes for the benefit of the various activities of the city of Minneapolis; to the other class belong the people who are unable to pay, and very often unwilling to pay, so that the burden of the second class is carried entirely by those of the first class. It seems quite evident that the Minneapolis Taxpayers' Association will have to get into the investigation in some way and decide upon the line of eligibles and non-eligibles, because the Taxpayers' Association is looking after the interests of the City of Minneapolis, and they have a method of their own in making inquiries. It is generally true that physicians take care of a great many people whom they list as charity patients, that is, those who are unable to pay at all, or those who are able to pay a small sum. That, however, is an individual matter, and it is up to the physician to decide who shall pay and who shall not. But it is up to the City of Minneapolis to decide who shall pay the taxes for the maintenance of the Minneapolis General Hospital.

It is not an easy problem, but the business may be conducted on the same plan as any big business organization is conducted. There should be investigation into the cost of properties, the maintenance of properties, and the price to be charged against such properties, the price of supplies and demands, and then the estimation of what is actually necessary for the running of a large institution. The public, of course, as a rule, know nothing about these matters and care less, except that they not infrequently want to take advantage of an opportunity to which they are not entitled. There are always individuals who will go to a physician with the best of intentions, that is, they think they present the best of intentions, but who have in their minds the getting of medical services for nothing; and they usually succeed, either because the physician is not able to locate them, or, when he does, because he finds they are worthless people—in principles and finances—so he drops them as undesirables. Yet the chances are ten to one if some of these same people apply to him for medical aid he will extend it, partly because he is not a very good business man, partly because his sympathies are easily aroused, and partly because he thinks it is his duty to do good to the sick and the suffering. The result is he is frequently hoodwinked by people who are really able to pay and he thus



is a factor in establishing the perpetration of a fraud among those who patronize the doctor and the hospital.

The same principles may be applied to the municipal hospital, which is administered by a competent and capable man, Dr. Walter E. List. During his administration there have been many changes of ideas which are gradually coming to the surface. In early years this hospital was established for the poor, and as the discussion of economic and social problems comes up the hospital, as well as the individual, must of necessity change its attitude. On the whole, the idea was supposed to be established in perpetuity that the hospital was to be maintained for the benefit of the sick poor. But now the questions of social viewpoint have entered into the situation, and there is a large vision of things which would eventually take account of community assets and liabilities because the individual demands more attention and better service. Oftentimes he does not deserve it, but he demands it whether he does or not.

Most of our social agencies are maintained by voluntary contributions, but our General Hospital is maintained by taxation. It is only within two or three years that an effort has been made by the social service department of the General Hospital to ascertain and weed out those who are not entitled to hospital service without cost. The General Hospital very naturally, as all other hospitals, takes in patients in emergencies who must have immediate attention. No one can possibly complain of this attitude. But as soon as the immediate urgency is satisfied these patients should be turned over to other hospitals. The public are going to object, some of them, to the so-called charity elements, others to the fact that they have a general hospital for the benefit of the people of Minneapolis, and they believe they are entitled to this service just as the are at the University Hospital. They come there with the idea that the State has built this hospital for them, and whether they can pay or not they are bound to get in.

In the meantime other hospitals are suffering more or less from this new idea. It is not a question of admitting those who can pay, those who, upon investigation, are found to be able to pay, and those who should pay because they are demanding service to which they are not entitled and for which they pay no taxes.

Then, too, the General Hospital is very much like many medical men who fail to collect when they can or when they should; just as doctors are slow in rendering a bill for their services and

collecting by any legitimate means, so the hospital does not always promptly collect for its services.

## THE MINNESOTA STATE MEDICAL ASSOCIATION

The recent meeting of the Minnesota State Medical Association at Duluth, on June thirtieth to July second, was a great success. More than 500 members were registered, and Duluth presented a very desirable and comfortable change of weather; most of us went up there perspiring and more or less cursing under our breath and arrived in Duluth cool and comfortable. The days spent there were bright and sunny with a normal temperature,—all because the gods favored the meeting at Duluth. Every arrangement was complete. The entire meeting was at the Hotel Duluth, a delightful hotel and most comfortably arranged. It housed all of the members, most of whom were guests of the Hotel; it housed all of the meetings of the Delegates, the special committee meetings, and above all the Council, which met in a suite especially reserved by the President and his Council. They had a delightful ball-room which seated all the members comfortably, and, best of all, the acoustics of the room were entirely satisfactory. Other builders of auditoria should look into the Duluth ball-room before they construct an audience room.

The presentation of papers from various parts of the state was carried out in excellent form and with dispatch. The majority of the men who had papers to read finished within their allotted time, and those who did not were from out-of-town and were allowed by courtesy to extend their remarks. The program consisted of clinics, medical and pediatric, with a symposium on "Immunization and Acute Infectious Diseases;" a symposium on "Pulmonary Tuberculosis",—all this on Thursday. In the evening a medical economics meeting was held in the ball-room, the same meeting place in which the "Illinois Lay Education Program" was outlined by Dr. Ferguson, who is president of the Illinois Health Federation. He was snappy, and keen in his analysis of what they had been doing and complimented the men in Minnesota on what they had accomplished and encouraged them to keep on with the work, all of which was outlined a little later by Dr. George A. Earl, of St. Paul, who has taken hold of the Minnesota Public Health Education Program with vigor. Dr. Earl knows how to talk, knows how to present

his subject, and he is intensely interested in the work he is undertaking.

Next on the program was the subject of "Medical Economics," by Dr. M. L. Harris, of Chicago, Chairman of the Judicial Council of the A. M. A. Dr. Harris is an admirable talker, and he knows what he is talking about,—he always does. He gives one the impression at first of self-effacement, but before he has finished his paper he has made himself very clear and has said some things that are worth remembering, all of which will be printed in *Minnesota Medicine* in due time. One thing he made very impressive was the necessity of studying the economic problems of the patients first, and their ability to pay or not to pay, and the amount they should pay for certain things. He probably would be considered by most "aggressors" as a man of old-fashioned ideas. As a matter of fact, he is a man of sterling quality and is unusually fair in his analysis of the individual and his disease. He cited several instances where patients had been overcharged. One man who had been operated on for hernia and was charged \$400. He thought that was too much for the man was not able to pay that comparatively large sum. He told of another case of a servant girl who was earning twelve dollars a week who had to have her appendix removed, and the surgeon charged her \$300, a wholly unfair bill for a woman of her earning capacity. He cited the case of another, a man who was on the operating table for an exploratory operation, and the surgeon found that the case was inoperable, but he went to the family who were waiting in the adjoining room and demanded his fee of \$1,500 before he told them anything about the conditions that were found, and before they knew that the man had died on the operating table. These are rather bald facts to present, but evidently the thing is being done in many cities in the Middle West, the East, and the Extreme West.

The program was completed on the subject of "Legislation and the Doctor," participated in by Dr. H. M. Johnson, who was the legislative committeeman, Dr. Charles Bolsta, who drew up the Basic Science Bill, Drs. J. T. Christison, C. B. Wright, S. H. Boyer (of Duluth), and Dr. L. Sogge (of Windom) who were all extremely active in assisting the chairman of the Legislative and Public Policy Committee in his work in the Legislature early in the year. If we can ever get Dr. Sogge to give us his biblical quotations from Leviticus XVI, we will all know "where the man got his goat." At least, he explains from where this familiar term arose; so that getting

one's goat, although a commonplace expression used on many different occasions, is really and literally from the Bible.

The program of Friday and Saturday until noon contained many interesting factors and was participated in by local men, members of the Association, and members from Rochester. The "Symposium on Gall-Bladder and Liver" was carried on largely by Rochester men, and Dr. Arnold Schwyzer of St. Paul. Then followed papers on "Non-Operative Treatment of Fractures," giving a series of moving pictures by Dr. F. D. Dickson and Dr. R. L. Diveley, of Kansas City, Mo. Dr. P. M. Hickey read a paper on "Radiographic Interpretation." He was from Ann Arbor, Michigan, and a professor of Roentgenology at the University of Michigan. Dr. H. E. Mock, Assistant Professor of Surgery, and Dr. Joyn Coulter, Assistant Professor of Physiotherapy, Northwestern Medical School, Chicago, read papers on "Physiotherapy." On Friday afternoon the program consisted of two papers by Rochester men and one paper by a Minneapolis man, in the first half: Dr. B. H. Hager, who read a paper on "Renal Pathology," and Dr. C. H. Mayo on "The Cervix as a Focus in Chronic Disease;" and Dr. J. C. Litzenberg, who read a paper on "Cancer of the Uterus." One of the interesting papers of the afternoon was presented by Dr. J. O. Polak, of Brooklyn, N. Y., Professor of Obstetrics and Gynecology, Long Island Medical College Hospital, who read a particularly practical paper, as all the great men do, on "Present Trends in Gynecology." This was followed by a symposium on "Gastro-intestinal Tract," by Dr. W. C. Alvarez, of Rochester, Dr. C. B. Wright, of Minneapolis, Dr. P. M. Hickey, of Ann Arbor, Dr. D. C. Balfour, of Rochester, and Dr. J. A. Bargaen, of Rochester.

Saturday forenoon a number of papers were read. Everyone seemed to be about ready to give up the medical profession about this time, and many of them had gone away, and some of them had gone home. It was noticeable at some of the meetings that many of the men had a score for attendance, and some of them felt called upon to get up at five o'clock in the morning in order to get to the meetings. The score ran from 86 to 120, depending entirely upon the man and the position of the golf ball. There was many a proud man who went out to play his usual game, and he possibly talked more of his stroke than he did of his clinic. However, he is not to be denied this passing pleasure, for the game is in a sense a medical measure. It is



used to encourage patients to return to their normal state of health. Many a man has profited by his doctor's advice and many a doctor has profited by his own advice in playing golf.

During the morning session on Saturday the papers presented were on a variety of subjects, such as "Rectal Fistula in the Tuberculous," by Dr. W. A. Fansler; "The Value of Refraction in Children," by Dr. W. H. Fink; a "Pediatric Clinic," by Dr. I. A. Abt, of Chicago, who is so well known in the Northwest and who is such an eminent man in his subject; "Peptic Ulcer," by Dr. J. B. Carey; "Five Years of Hospital Obstetrics," by Dr. G. P. Dunne; "The Malarial Treatment of Paresis," by Dr. J. C. Michael; "The Treatment of Acute Empyema," by Dr. J. M. Hayes.

The program was interrupted at this point to listen to the installation of officers, which required only a few moments, but they received their quota of applause and approbation. Following this was a symposium on "The Heart," by men of Minneapolis mostly with the exception of Dr. W. S. Middleton, of Madison, Wisconsin, who gave a "Clinic on Diseases of the Circulatory System," and Dr. C. N. McCloud, of St. Paul, who gave a paper on "Heart Disease from the Insurance Standpoint."

### THE HOUSE OF DELEGATES

The President of the Minnesota State Association, Dr. W. F. Braasch, instituted a new idea in business for the House of Delegates which seemed to work out very well. A committee called a "Committee on Resolutions," finally changed to a "Committee on Reference," was appointed to take care of all resolutions and requests that were to come before the House of Delegates, and was composed of Dr. W. A. Coventry, of Duluth, Dr. F. J. Savage, of St. Paul, and Dr. W. A. Jones, of Minneapolis as chairman. The result was that a great many of these resolutions came in and were acted upon after the House of Delegates had heard them and they were referred to the Committee which looked them over and decided what should be presented and in what form. Consequently many resolutions were introduced and were brought up at the last noon meeting of the House of Delegates, the Secretary reading the request and the Chairman of the Committee on Reference giving the answers. It served to expedite matters, saved a great deal of time, and incidentally eliminated the necessity of a great deal of discussion. For instance, some of the members of county societies

called attention to various changes they would like to see made, but they all accepted the recommendations of the committee. Some were merely referred back to the county society for action. Others were referred to the Council, and the minor number were voted on by the House of Delegates. One resolution which was introduced by the Ramsey County Society had to do with the same problems with which the Hennepin County Medical Society has been confronted, namely, the admission of patients to the Ancker Hospital, corresponding to our General Hospital in Minneapolis. That was evidently looked upon as a matter belonging to the local organization and evidently a matter for them to settle, consequently that was the only resolution that was lost in the House of Delegates.

Then, too, an important resolution went through which originated from the State Board of Health. Dr. Chesley presented the resolution asking that the high puerperal death-rate be more carefully studied and investigated. This was recommended without hesitancy. Other resolutions were referred to the Committee on Contract Practice, which is quite a new departure and is composed of well-known men and will evidently have much to do with the shaping of legislature in the House of Delegates. One of the resolutions had to do with the Workmen's Compensation Act, a very much needed investigation as the Compensation Board have their troubles, and certainly the injured who come under the head of the compensation law have theirs. This includes the insurance adjusters, and this will be threshed out, it is hoped, within the next few months and put on a more rational basis. This investigation also includes the maintenance of a reasonable fee basis. That has been under discussion for so long that it is necessary to take some steps in the matter.

An unfortunate condition arose in which a report came from the manager of the State Fair, who had previously maintained a Public Health Educational Exhibit. This year they decided to abandon it as they had no money to carry it on. They were instructed by the House of Delegates to get together with the proper Public Health Educational Committee and see if they could not settle their differences. The State Fair is able to take care of art exhibits and other cultural education, but they evidently think it is not necessary to pay much attention to public health, and the doctors are going to see what they can do to increase their interest.

Every man should read the new constitution adopted by the State Association. It will help

him very much in his adjustment of himself to general educational problems, as well as to the so-called ethics of the profession. The committee which was appointed a year ago to investigate the differences between the Minnesota State Medical Association through its Medical School Committee made its report; and the Secretary, Dr. C. C. Kennedy, made a number of investigations in other states, and the report was read and adopted. However, it is hardly possible to get any benefit from a report of this kind after so short a time, but if it is printed the doctors are urgently requested to read it. They will get much information, even if the committee did not accomplish much with the Regents. The report of the Committee of the Minnesota State Medical Society on Medical Expert Testimony slumbered quietly and disappeared from the horizon.

The House accepted the invitation of the State Association to meet in Minneapolis for a one-day session of the House of Delegates on the day before the meeting of the American Medical Association. This will be enlarged upon later when the committees are formed.

The resolution introduced by Dr. Horace Newhart on the examination of the hard-of-hearing children was approved and adopted, as was the recommendation of Dr. Ralph P. Knight relative to the appointment of a military committee by the President of the Minnesota State Medical Association to confer with the army officers and perhaps assist them in coming to some of their decisions.

A number of alterations in the constitution by amendment and some by amendment of the by-laws were adopted by the House of Delegates in its first day session. The report of the Delegates from Minnesota was read and adopted. Dr. J. C. Litzenberg read the report, and then decided that he did not care to serve any longer as a Delegate and gave his reasons for his withdrawal; that he thought a member should be appointed for a longer term of years, and he felt he was not in a position to accept another term of office. So the Council promptly reelected him to serve for an indefinite period, all of which caused a good deal of amusement. By declining, Dr. Litzenberg endeared himself to the members so they would not accept his resignation.

A resolution was introduced asking that a permanent heart committee be formed as a permanent component part of the organization of the Minnesota State Medical Association, the committee to be composed of five members, three of whom are to be physicians who are familiar with heart problems, one a member of a public

health body, and one an interested and influential layman. This was recommended and adopted.

### SIDELIGHTS ON THE MEETING

The man who attends a medical meeting, be it county, state, or district, usually has a good time seeing his friends. That is one of the bright sides of a medical convention. Then, too, he renews his acquaintances, he sees his fellowmen under conditions that promote better understanding, forgets the professional side, and meets the social element. Underneath the skin of every man is found a spot which appeals to his fellow. The man who is occasionally looked upon as a grouch or a cynic turns out to be a really good fellow after all. One hears, too, amusing incidents and stories—for doctors think they are great story tellers; in a measure they are, from their long experience and association with the lay people, and their opportunities to see the sad and the sunny side of life. Doctors are also recognized as great playmates and they get on quite equal terms with their superiors and on equally good terms with their alleged inferiors,—who may be among the superior type. The writer overheard two men from a distant city talking with two men from the country; and in butting in, in order to shake hands with one of the gentlemen from out-of-town, he heard the other one say, "By the way, I was down in Iowa the other day and I met a friend of yours." Instantly, without a change of facial expression the one addressed said, "and what did she say about me?" On another occasion one of these men from "out-of-town" in commenting upon his experience said he was called away in a consultation and started for a distant town in an aeroplane. He said his experience was rather unique in that he felt himself suddenly, abruptly, precipitously rising in the air with a swing and a swirl. They flew on for some distance making fast time when suddenly they discovered that the motor was not working, due to what they found out afterwards was the plugging of a gasoline pipe. Very naturally when the motor stopped the air machine began to go down, and the storyteller, in describing it, said: "If it were not for the fact that I had been raised a good Methodist in my young days you never would have seen me before this audience." He treated it as a matter of no consequence, yet he was in a perilous position. But no doubt he stood it like a medical man in any emergency.

The chief bright side of the Minnesota State Medical Association meeting was the manner in which Duluth physicians entertained their guests.



They provided for every possible emergency, they had everything in readiness and the business was carried on with precision. They had a lengthy program but that was not due to the men in Duluth but due to the chairmen of the Sections. But they redeemed themselves by cutting out discussions and avoiding the occasional flaring up of a disturber who talks when he has nothing to say.

The social side of the Women's Auxilliary was carried out remarkably well. They had all the joys of an automobile ride around Duluth, they had the comforts of a country club, and they had meetings at which addresses were made by mere men of the medical profession. What else could they ask? The women prevailed, however, and elected Mrs. Davis of Duluth as president of the Women's Auxilliary. Mrs. Davis is a woman of experience and capability. It was at the banquet that the past president, Mrs. J. T. Christison, of the Women's Auxilliary, covered herself with glory and made a fine speech, and incidentally told the doctors some things they should know. It was there, too, the new Auxilliary president presented herself very graciously and with considerable address made herself popular with her audience at once. The man who had charge of the banquet, and particularly the man who presided as toastmaster, was Dr. Charles Mayo, a well-known surgeon in Rochester. He was at his best at this meeting and his fund of stories that were really funny and apt, enlivening the evening tremendously. He made fun of everyone present and particularly the individuals he called on to speak, even some of his friends from the East. He had a good time and so did the rest of us. He had a great deal of pleasure in introducing the President of the Minnesota State Medical Association, one of his chief aids, Dr. William F. Braasch, and he, too, had a glorious time. He reviewed what had been done during the year and very gracefully wound up by presenting the indomitable Johnson with a platinum watch, duly inscribed on the inside of the case, as a token of the Association's appreciation of the work he had accomplished. Dr. Johnson did not burst into tears as many would, but he was very clever in his thanks as the presentation was a complete surprise to him. Dr. C. B. Wright, the incoming president, who takes the office in January, created a very favorable impression by his carefully selected anecdotes and the shortness of his remarks. On the whole, the sidelights of the Association were remarkably bright.

## MISCELLANY

### ANTI-SNAKE-BITE SERUM

The *Bulletin* of the Mayo Clinic published in its issue of June 21, 1927, a notice that the laboratories of the Clinics have on hand a supply of Antivenin, or antitoxin of Snake-bite poisoning. The announcement reads as follows:

#### ANTIVENIN

At the request of several members of the staff, Anti-Crotalus serum will be kept in stock in the Clinic Laboratories. Very recently the Mulford Biological Laboratories have been authorized to sell Anti-Rattle-Snake serum under the direction of Dr. do Amaral, who was an interesting visitor at the Clinic some years ago. The serum is practically polyvalent for North American snakes except the coral snake. It possesses unusual keeping qualities and is not easily affected by ordinary temperatures. Ordinarily the chances of its being effective in event that it is used twelve to twenty-four hours after a snake bite are good. The procedure following a snake bite should be as follows:

Apply a ligature above the bite. This should be tied tightly at first but must be partially released for a few seconds at from five to ten minute intervals. There is no advantage in making an incision or applying potassium permanganate to the lesion. A stimulant such as alcohol, should be avoided, but strychnine may be given if weakness develops. As soon as possible, the Anti-Snake-Bite Serum should be administered subcutaneously. The entire amount found in a syringe is the dosage for a patient of any age, and one dose is practically always sufficient to effect a cure. Of course the earlier it is used the better. The only poisonous snakes in North America are the rattle-snakes, the copper-head, the water moccasin and the coral snake. It is of interest to know that this is the first Antivenin Institute ever licensed in America.

T. B. MAGATH

## NEWS ITEMS

Dr. E. T. Martin, formerly of Hibbing, has joined the Webber Clinic at West Duluth.

Mrs. Bertha Rogers has opened a small hospital at Hobson, Mont., to meet community needs.

Dr. H. G. Franzen, of Minneapolis, who has been studying in Europe, is expected home this week.

Dr. Edward A. Regner and Miss Mary C. Hoy, both of Minneapolis, were married on June 15.

Dr. Gustav Edlunds, of St. Paul, was married last month to Miss Helen V. Loberg, also of St. Paul.

The cost (\$65,000) for an addition to the Union Hospital at New Ulm has been practically all raised.

An addition to the Itasca County Hospital at Grand Rapids (Minn.), not to cost over \$28,000, is to be built at once.

The Supreme Court of Minnesota has decided that aspirin cannot be sold outside of licensed drug-stores in Minnesota.

Dr. H. L. Taylor, of St. Paul, has gone to Europe to attend several tuberculosis association meetings. He will return in September.

Dr. S. J. Thorson has given up practice at Little Fork and will do postgraduate work in the East before resuming practice elsewhere.

Several counties in Southern Minnesota are considering the matter of joining in building and jointly conducting a tuberculosis sanatorium.

Dr. E. S. Murphy, of Glendive, Mont., was married, June 15, to Miss Edith E. Bartsch, of Brainerd, where Dr. Murphy formerly practiced.

Dr. Norman D. Tuttle has moved from St. Paul to Chicago, where he will be connected with the medical units of several insurance companies.

Dr. and Mrs. George T. Ayres and daughter Florence, of Ely, are spending the summer in Europe. Dr. Ayres is a member of the Shipman Hospital staff.

The George B. Wright Memorial Hospital, of Fergus Falls, is to be enlarged by a twenty-bed addition. It now has a capacity of forty-five beds, and is overcrowded.

Dr. John S. Milton, a 1927 graduate of the Medical School of the U. of M., and Miss Una Sodergren, both of Minneapolis, were married last month.

Dr. S. H. Koop, of Duluth, a 1926 graduate of the Medical School of the U. of M., and Miss Helen B. Sehl, of Minneapolis, were married last month.

The Hennepin County Tuberculosis Association is planning to build a home for convalecents leaving the sanatorium in need of aid until they find employment.

The annual meeting of the Medical Reserve Officers for this district was in session at Fort Snelling for twelve days this month. Thirteen states were represented.

Dr. L. H. Braafladt, a medical missionary

driven out of China, will take charge of the Pathological and X-Ray Laboratory of Trinity Hospital of Minot, N. D., on September 1.

The American Hospital Association will meet in Minneapolis in October. Many of the members will visit Rochester on October 9, coming from Chicago in a special train for that purpose.

Dr. Richard R. Jones, a pioneer physician of Britton, S. D., died last month at the age of 66. Dr. Jones was a graduate of Rush, class of '88, and had practiced in South Dakota over a third of a century.

Dr. John M. Robinson, of Duluth, is Chairman of the Minnesota Committee of Pennsylvania Alumni, School of Medicine, who are seeking to raise \$3,000,000 for the Medical School of that University.

Dr. Iver Sivertsen, of Minneapolis, and Dr. C. L. Larsen, of St. Paul, who, with members of their families, have been travelling in Europe for the past three months, will return to their respective homes this month.

Dr. A. M. Hanson, of Faribault, is the author of the chapter on surgery constituting the eleventh volume of a series on war surgery issued by The Medical Department of the United States Army in the World War.

The Black Hills District Medical Society, of South Dakota, met at Rapid City on June 24 and listened to an address by Dr. J. L. Crenshaw, of the Mayo Clinic, on "Some Errors in the Diagnosis and Treatment of Urological Cases."

Dr. John F. Fulton, Jr., son of Dr. John F. Fulton, of St. Paul, has been admitted to Alpha Omega Alpha, the honorary medical society at Harvard, where he is doing research medical work. Dr. Fulton is a graduate of both Minnesota and Harvard Medical Schools.

The election of officers of the Medical Alumni Association of the U. of M., held at the annual luncheon at Duluth, resulted as follows: President, Dr. O. S. Wyatt, of Minneapolis; vice-president, Dr. Martin C. Bergheim, of Hawley; secretary-treasurer, Dr. Donald Daniel, of Minneapolis.

Dr. G. F. Walter, who has been doing work on the Mesaba range at Marble, for several years, is taking care of Dr. L. B. Vaughan's work at Hurley, S. D., while Dr. Vaughan is doing postgraduate work. Dr. Walter will not return to Marble, and is open for engagement elsewhere.



Dr. Charles B. Wright, of Minneapolis, was elected president of the Minnesota State Medical Association at its last annual meeting, held in Duluth, June 29-July 2; and Minneapolis was selected as the place of meeting in 1928. A general report of the Duluth meeting is given in our editorial columns.

Dr. S. J. Hathaway, an instructor in the Medical School of the University of Louisville (Ky.), has joined the staff of the More Hospital, of Eveleth. Dr. Hathaway is a 1919 graduate of the Medical School of the U. of M., and was formerly associated in surgical work with the Drs. Earl, of St. Paul.

The suit between Dr. W. P. Larson, bacteriologist of the University of Minnesota, and David Crowther, an employe of the Dental School, as to priority in the discovery of a means of destroying bacteria, was decided in favor of Mr. Crowther. Dr. Larson wanted to prevent the commercial exploitation of the process.

Dr. Charlotte C. Campbell Pratt, a retired physician who formerly practiced at Fargo and Gardner, N. D., died last month. Dr. Campbell was a graduate of the Medical School of the University of Minnesota, class of 1900, and was one of the first women graduates of the School. She retired from practice a number of years ago on account of poor health.

Dr. G. Biornstad, of Minneapolis, left July 1 for Europe, to be gone until October 1. He will visit physiotherapy clinics in England, Germany, France, Norway, and Sweden. In September he will attend the reunion, at the Royal University of Norway at Oslo, of graduates of 1887, celebrating his fortieth anniversary as an alumnus of that ancient institution.

At the June meeting of the Sixth District Medical Society of North Dakota, held at Bismarck, Drs. Bodenstab and LaRose gave reports of the last annual meeting of the A. M. A., and Dr. Stackhouse reported the recent State Medical Association meeting at Grand Forks; Dr. A. J. Pacini, of Chicago, gave a demonstration of physical therapy apparatus at St. Alexis Hospital.

At the banquet of the Minnesota State Medical Association, the retiring president, W. F. Braasch, of Rochester, presented to Dr. H. M. Johnson, of Dawson, a former president of the Association, a handsome gold watch inscribed as follows: "Presented to Dr. Herman M. Johnson, July 1, 1927, by the Minnesota State Medical

Association in appreciation of distinguished services rendered to the medical profession."

Dr. Henry W. Brazie, of Minneapolis, died on July 2, at the age of 84. Dr. Brazie was for many years a prominent homeopathic physician in Minneapolis. He was a Civil War veteran and took up medicine after the war, graduating from the Cleveland University of Medicine and Surgery in 1871. He was a notable figure in Minneapolis in both professional and political circles, and was a highly respected citizen.

The Great Northern Railway Surgeons' Association held its fifth annual meeting at Great Falls, Mont., last month when the following officers for the current year were elected: President, Dr. C. B. Lewis, St. Cloud; first vice-president, Dr. E. H. Hayden, Cashmere, Wash., second vice-president, Dr. L. H. Kermet, Minot, N. D.; third vice-president, Dr. E. M. Gans, Judith Gap, Mont.; secretary-treasurer, Dr. R. C. Webb, Minneapolis. The officers of the Association will select the place of meeting in 1928.

The District Medical Society of Watertown, S. D., met at Lake Kampeska last month, and had as guests a number of members of the Madison and Whetstone Valley Societies. Papers were presented by Dr. B. A. Bobb, of Mitchell, on "Acute Osteomyelitis"; by Dr. Charles Bolsta, of Ortonville, Minn., on the "Basic Science Law"; and by Dr. H. M. Johnson, of Dawson, Minn., ex-president of the Minnesota State Medical Association, on "Medical Legislation in Minnesota." A splendid dinner, as well as a splendid program, was enjoyed.

The Sioux Valley Medical Association held its summer meeting at Sioux Falls, S. D., on June 29. The admirable one-day program, which appeared in our issue of June 15, was given. The attendance was good and the banquet and entertainment could not be excelled. The Association voted unanimously to hold all future midsummer meetings at Sioux Falls. The following officers were elected for the current year: President, Dr. G. G. Cottam, Sioux Falls, S. D.; first vice-president, Dr. R. F. Bellaire, Sioux City, Iowa; second vice-president, Dr. C. O. Wright, Luverne, Minn.; treasurer, Dr. W. R. Brock, Sheldon, Iowa; secretary, Dr. John H. Henkin, Sioux City, Iowa.

#### **The West Central Minnesota Medical Society**

The members of the West Central Minnesota Medical Society and their wives had an outing at Ortonville, on June 19, 1927. Drs. Bolsta, Karn,

O'Donnell, and Shelver were the hosts on this occasion and a very enjoyable time was had. Dr. Herman Johnson, of Dawson, was also with us on that day. The next meeting will be held at Morris, on October 12, 1927. This will be our annual meeting with election of officers for the coming year.

H. LINDE, M.D.  
Secretary.

#### Northwestern District Medical Society of North Dakota

The Society held a regular meeting at Minot, on June 29.

Dinner was served at 6:15. President Wheelon announced an invitation to hold the August meeting at Kenmare Hospital, Kenmare; and the invitation was accepted.

President Wheelon brought up for discussion the question of whether to continue meetings through the summer. The sentiment being unanimous in favor of keeping up the regular monthly meetings, no formal action was necessary.

The following clinical program was presented:

Dr. Sorensen:

1. Perinephritic abscess pointing in perineum.
2. Complete congenital occlusion of ileum.

Dr. Cameron:

1. Drainage of fluid from the pericardial sac followed by death from left ventricle rupture.
2. Hemorrhagic cyst of the left ovary simulating acute appendicitis.
3. Pernicious anemia, treated by liver diet.

Dr. Nestos:

1. Atypical case of appendicitis.

ANDREW SINAMARK, M.D.  
Secretary.

#### The Minnesota State Board of Medical Examiners

The new Board and its officers are as follows:

President: L. A. Barney, M.D., Duluth; vice-president, C. L. Sherman, M.D., Luverne; secretary-treasurer, A. E. Comstock, M.D., St. Paul; E. T. Sanderson, M.D., Minneota; G. B. Weiser, M.D., New Ulm; C. E. Caine, M.D., Morris and J. F. DuBois, M.D., Sauk Center.

#### Locum Tenens Work Wanted

By experienced physician who is available at once. Graduate of a high-grade medical school. Address 372, care of this office.

#### Nurse Wants Position

A nurse with one year's training wants general day duty in a small-town hospital. References given. Address 378, care of this office.

#### Wanted by Specialist

An experienced eye, ear, nose, and throat man, competent in all branches of his specialty, wants a location or association with a group. Address 375, care of this office.

#### Fine Opening for Physician

In a good country town in Minnesota. Knowledge of refraction work and speaking German desirable. Wanted as a partner by a physician who wishes to retire soon. Address 357, care of this office.

#### Laboratory Technician Wants Position

Have had several years' experience in first-class laboratory and large clinic work, in giving lamp and diathermic treatments, and in office work. Best of references. Address 369, care of this office.

#### Laboratory Assistantship Wanted

By a University graduate who majored in chemistry and had some laboratory experience, and desires to complete her laboratory education. University references given. Address 379, care of this office.

#### Practice for Sale

In county-seat town in western South Dakota. Well-established practice and large territory with little competition. Practice with appointments goes to purchaser of residence property. Address 373, care of this office.

#### Office Space for Rent

Either part or full time, together with a group of physicians in Minneapolis. \$50.00 per month. May pay on percentage of income. Equipped with x-ray and clinical laboratories with expert medical technician. Address 370, care of this office.

#### Good Practice for Sale

Opportunity for general practice in Eastern South Dakota in thriving town. Practice yields \$6,500 cash. One other physician in town. Beautiful residence and office for rent. For price of office furniture and instruments. Am specializing. Will bear investigation. Address No. 374 care of this office.

#### General Practice for Sale

In South Dakota. General-practice good for a German or German-speaking physician. Population of town, 1,200. One other physician. Have office girl doing routine laboratory work. Large thickly settled territory; ideal location; appointments transferable; public and parochial schools. Bears closest investigation. Address 376, care of this office.

#### Clinic Location in Minneapolis

##### (200 Oak Grove, on Spruce)

Will arrange space in this new building, 200 sq. ft. or less, for physicians or clinic. Private ground floor entrance. Walking distance. Established drug-store operating. Easy to make a medical center in this rapidly developing commercial, hotel, apartment, and hospital zone.

Bellefonte Realty Co., Inc.

Telephone—Main 4882

804 Besse Bldg.

#### Hospital for Sale

Modern hospital partly equipped; 2-story brick building; 5-room apartment for Doctor; waiting-room, office, operating-room; wards for 12 patients; large porches; in a town 65 miles from Minneapolis. Best of country and good opening for local practice. Price \$18,500.

Location and building are ideal for a sanatorium. Address Walstad-Pearson Investment Co., 534 Security Building, Minneapolis.



# THE JOURNAL-LANCET

Represents the Medical Profession of  
**Minnesota, North Dakota, South Dakota, and Montana**

The Official Journal of the  
**North Dakota and South Dakota State Medical Associations**

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## TRANSACTIONS OF THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION—FORTY-SIXTH ANNUAL MEETING—1927

### OFFICERS—1927-28

#### PRESIDENT

S. M. HOHF, M.D.....Yankton

#### FIRST VICE-PRESIDENT

N. K. HOPKINS, M.D.....Arlington

#### SECOND VICE-PRESIDENT

L. N. GROSVENOR, M.D.....Huron

#### THIRD VICE-PRESIDENT

P. D. PEABODY, M.D.....Webster

#### SECRETARY-TREASURER

J. F. D. COOK, M.D.....Langford

### COUNCILORS

#### COUNCILOR—FIRST DISTRICT

R. D. ALWAY, M.D.....Aberdeen

#### COUNCILOR—SECOND DISTRICT

H. W. SHERWOOD, M.D.....Doland

#### COUNCILOR—THIRD DISTRICT

J. R. WESTABY, M.D.....Madison

#### COUNCILOR—FOURTH DISTRICT

A. A. McLAURIN, M.D.....Pierre

#### COUNCILOR—FIFTH DISTRICT

O. R. WRIGHT, M.D.....Huron

#### COUNCILOR—SIXTH DISTRICT

FREDERICK TREON, M.D. (Chairman) Mitchell

#### COUNCILOR—SEVENTH DISTRICT

R. W. MULLEN, M.D.....Sioux Falls

#### COUNCILOR—EIGHTH DISTRICT

J. P. ISAAC, M.D.....Freeman

#### COUNCILOR—NINTH DISTRICT

F. W. MINTY, M.D.....Rapid City

#### COUNCILOR—TENTH DISTRICT

W. M. QUINN, M.D.....Winner

#### COUNCILOR—ELEVENTH DISTRICT

A. E. BOSTROM, M.D.....De Smet

#### COUNCILOR—TWELFTH DISTRICT

A. L. SEVERIDE, M.D.....Webster

#### COUNCILOR—THIRTEENTH DISTRICT

G. E. BURMAN, M.D.....Carthage

#### DELEGATE TO THE AMERICAN MEDICAL ASSOCIATION

W. R. BALL, M.D. (1927-29).....Mitchell

#### ALTERNATE

T. F. RIGGS, M.D.....Pierre

### DELEGATES

#### ABERDEEN DISTRICT

E. W. WHITCOMB, M.D.....Cresbard

R. S. HART, M.D.....Groton

E. A. PITTENGER, M.D.....Aberdeen

#### WATERTOWN DISTRICT

J. B. VAUGHN, M.D.....Castlewood

#### MADISON DISTRICT

C. E. SHERWOOD, M.D.....Madison

#### PIERRE DISTRICT

A. A. McLAURIN, M.D.....Pierre

#### HURON DISTRICT

R. A. BUCHANAN, M.D.....Huron

#### MITCHELL DISTRICT

O. J. MABEE, M.D.....Mitchell

#### SIOUX FALLS DISTRICT

P. R. BILLINGSLEY, M.D.....Sioux Falls

P. E. BRANDON, M.D.....Sioux Falls

L. J. PANKOW, M.D.....Sioux Falls

#### YANKTON DISTRICT

D. S. KALAYJIAN, M.D.....Parker

J. E. TRIERWEILER, M.D.....Yankton

**BLACK HILLS DISTRICT**

R. J. JACKSON, M.D.....Rapid City  
W. E. MORSE, M.D.....Rapid City

**ROSEBUD DISTRICT**

W. M. QUINN, M.D.....Winner

**KINGSBURY COUNTY DISTRICT**

E. H. GROVE, M.D.....Arlington

**WHETSTONE VALLEY DISTRICT**

G. H. LOWTHIAN, M.D.....Milbank

**MINOR COUNTY DISTRICT**

F. M. LORING, M.D.....Artesian  
G. E. BURMAN, M.D.....Carthage

**COMMITTEES****COMMITTEE ON CHILD HYGIENE**

W. H. SAXTON, M.D. (Chairman).....Huron  
E. A. PITTENGER, M.D.....Aberdeen  
WM. E. DONAHOE, M.D.....Sioux Falls

**COMMITTEE ON CONSERVATION OF VISION**

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C. C. HOAGLAND, M.D.....Madison  
G. W. POTTER, M.D.....Redfield

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J. C. OHLMACHER, M.D.....Vermilion

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R. G. STEVENS, M.D.....Sioux Falls  
F. E. CLOUGH, M.D.....Lead  
B. H. SPRAGUE, M.D.....Huron

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S. M. HOHF, M.D. (President).....Yankton  
J. P. ISAAC, M.D. (Chairman).....Freeman  
R. D. ALWAY, M.D.....Aberdeen  
H. W. SHERWOOD, M.D.....Doland  
J. R. WESTABY, M.D.....Madison  
A. A. McLAURIN, M.D.....Pierre  
O. R. WRIGHT, M.D.....Huron  
FREDERICK TREON, M.D.....Chamberlain  
R. W. MULLEN, M.D.....Sioux Falls  
F. W. MINTY, M.D.....Rapid City  
W. M. QUINN, M.D.....Winner  
A. E. BOSTROM, M.D.....DeSmet  
A. L. SEVERIDE, M.D.....Webster  
G. E. BURMAN, M.D.....Carthage

**COMMITTEE ON NECROLOGY**

JAMES B. VAUGHN, M.D. (Chairman) Castlewood  
J. F. ADAMS, M.D.....Aberdeen  
L. J. PANKOW, M.D.....Sioux Falls

**PLACE OF 1928 MEETING HOT SPRINGS**

## PROCEEDINGS OF THE HOUSE OF DELEGATES OF THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION

FIRST MEETING—WEDNESDAY, MAY 3, 1927

The first meeting of the House of Delegates of the Forty-sixth Annual Session of the South Dakota State Medical Association was called to order at the Marvin Hughitt Hotel, Huron, at

8:00 P. M., on Wednesday, May 3, 1927, by the President, Dr. T. F. Riggs, Pierre.

The following Councilors and Delegates were present:

**COUNCILORS****FIRST DISTRICT**

R. D. ALWAY, M.D.....Aberdeen

**SECOND DISTRICT**

H. W. SHERWOOD, M.D.....Doland

**FOURTH DISTRICT**

A. A. McLAURIN, M.D.....Pierre

**FIFTH DISTRICT**

O. R. WRIGHT, M.D.....Huron

**SIXTH DISTRICT**

FREDERICK TREON, M.D. ....Chamberlain

**SEVENTH DISTRICT**

R. W. MULLEN, M.D.....Sioux Falls

**EIGHTH DISTRICT**

J. P. ISAAC, M.D.....Freeman

**ELEVENTH DISTRICT**

A. E. BOSTROM, M.D.....DeSmet

**TWELFTH DISTRICT**

P. D. PEABODY, M.D.....Webster

**HOUSE OF DELEGATES****FIRST DISTRICT**

E. W. WHITCOMB, M.D.....Cresbard

**SECOND DISTRICT**

C. E. McCAULEY, M.D. (Substitute for R. S. Hart, M.D.).....Aberdeen  
J. B. VAUGHN, M.D.....Castlewood

**THIRD DISTRICT**

C. E. SHERWOOD, M.D.....Madison

**FOURTH DISTRICT**

A. A. McLAURIN, M.D.....Pierre

**FIFTH DISTRICT**

R. A. BUCHANAN, M.D.....Wessington

**SIXTH DISTRICT**

O. J. MABEE, M.D.....Mitchell  
J. F. MALLOY, M.D.....Mitchell

**SEVENTH DISTRICT**

G. G. COTTAM, M.D. (Substitute for P. R. Billingsley, M.D.).....Sioux Falls  
P. E. BRANDON, M.D.....Sioux Falls  
L. J. PANKOW, M.D.....Sioux Falls

**EIGHTH DISTRICT**

D. S. KALAYJIAN, M.D.....Parker

**NINTH DISTRICT**

A. G. ALLEN, M.D. (Substitute for R. J. Jackson, M.D.).....Hot Springs  
J. L. STEWART, M.D. (Substitute for W. E. Morse, M.D.).....Lead

**ELEVENTH DISTRICT**

C. A. BUTLER, M.D. (Substitute for E. H. Grove, M.D.).....Lake Preston

**TWELFTH DISTRICT**

G. H. LOWTHIAN, M.D.....Milbank



## THIRTEENTH DISTRICT

G. E. BURMAN, M.D.....Carthage  
President Riggs and Secretary Cook

The Secretary stated that the minutes of the 1926 meeting had been published in full in THE JOURNAL-LANCET, and moved their adoption as published.

Motion seconded and carried.

Dr. J. F. D. Cook presented the following report:

#### REPORT OF THE SECRETARY 1926-1927

To the President of the South Dakota State Medical Association and the House of Delegates:

Membership in the Association by Districts is as follows:

Aberdeen, First District.....	82
Watertown, Second District.....	25
Madison, Third District.....	14
Pierre, Fourth District.....	8
Huron, Fifth District.....	22
Mitchell, Sixth District.....	24
Sioux Falls, Seventh District.....	58
Yankton, Eighth District.....	35
Black Hills, Ninth District.....	40
Rosebud, Tenth District.....	13
Kingsbury, Eleventh District.....	13
Whetstone Valley, Twelfth District.....	12
Minor County, Thirteenth District.....	10
Total members .....	356

In making my report I wish to emphasize the fact that our local secretaries are remiss in collecting the dues. There are a number of men playing "leap frog" with the situation. They are members this year, and the next year are dropped. The local secretaries should make every effort to collect dues and should drop from the list every member who does not pay, and once dropped it should be required that the members should be voted on before coming into the Association again.

## ORGANIZATION

Minor County District Society (No. 13) was duly organized and granted a charter by the Board of Councilors.

At the present meeting the Board of Councilors will elect a Councilor for Minor County District. This Society was organized without affiliation with the State Association. Its object was for better mutual co-operation and protection. On invitation I visited this Society and explained to them how they could become a component society of the State Association, showing them that this connection with the State Association would make them eligible to membership in the American Medical Association. A petition was placed in the hands of your Secretary for action of the Board of Councilors. The petition was submitted to the Councilors by mail and a unanimous report was received granting this Society a charter.

In October your President accompanied by your Secretary made a trip of visitation to the various

District Societies. They were graciously received and the matters discussed were helpful in determining the policies formulated, relative to legislative matter. As I have visited with the various societies and individual physicians over the state I am impressed with the co-operation and mutual helpfulness and interest in the Association affairs.

## CONFERENCE OF STATE SECRETARIES

This conference was called by the A. M. A., and met at the A. M. A. headquarters in Chicago in November, 1926. All expenses were defrayed by the A. M. A. President of the A. M. A., Wendell C. Phillips, M.D., of New York, and other Association officers took part in the program. Secretary Olin West had the arrangements well in hand, and there was not a dull moment.

The first day was taken up with problems relating to organization, and Periodic Physical Examination of apparently healthy individuals. The second day the forenoon was given over to reports from the various State Secretaries, two minutes in which to report each state's activities, stressing in particular the campaign the Association had put forward relative to Periodic Physical Examination of the apparently healthy.

Your officers and Legislative Committee laid plans according to your instructions, employing legal help as directed, to legally advise and co-operate with the Legislative Committee and officers in such matters as may concern the medical profession that may come before the legislature at this session.

The attorney formulated a bill amending present law in which we were endeavoring to lower the period of limitations in which malpractice suits may be commenced from six to two years. This bill became a law, and the law now stands amended to two years.

The subject of workmen's compensation was also taken up, and the present law was amended, bringing the total compensation for hospital services to \$100.00 and for the physician's service \$100.00. In case hospitalization was not desirable or available the \$100.00 for hospitalization would be available for such care.

## CHILDREN'S BUREAU ASSAILED BY GROUP

A resolution describing the children's bureau in the Labor Department as a "socialistic and communistic agency" and urging that it be abolished was adopted by the National Society of the Daughters of 1812. The measure declared that the bureau represented the "peak of our bureaucratic despotism."

The State Board of Health adopted a Division of Hygiene, and we believe that the State Medical Association should guide and supervise all agencies doing this type of work in our state.

The Federal Sheppard-Towner has been continued for two years more by the Federal measure co-operating with the States. Congress has repealed this law.

The medical profession has co-operated well with the Division of Hygiene. I realize the difficult task of finding those persons of wide vision to direct the program, at the same time co-operate with those most vitally interested in a better physical condition

of the coming manhood and womanhood of our commonwealth. The boys and girls of to-day are the men and women of to-morrow, and upon them must fall the duties of citizenship. It is the duty of the medical profession to direct those educational agencies in a proper program toward better physical fitness and advocate the prevention of disease rather than cure, especially emphasizing the Periodic Physical Examination of the apparently healthy, on his birthday.

#### THE DRUGLESS HEALERS' BILL

Senate Bill No. 90, introduced by Senator C. J. Crandall, Jr., of Onida, was the Drugless Healers' Bill which, if enacted as a law, would make South Dakota the mecca for all kinds of medical quacks. It was introduced upon request by C. J. Crandall, of Hughes and Sully Counties, and provides for the licensing of "drugless" physicians. Under this bill nurse and doctor technicians, bone setters, and quacks who are now practicing without licenses, might have a right to the title of "doctor" under the State law. The objection to such licensing is that such practitioners might be called, on account of their titles, in cases where they could not offer the slightest help, and in fact might injure the patient. Human lives might be sacrificed through ignorance.

This bill is one of the most vicious bills ever introduced to the legislative body. The requirements in Section 5 are very easy. It provides for licensing persons with the simple requirements that they have practiced one of the drugless systems in one place for one year. For the ordinary licensing the applicant must prove that he or she has completed a course at a chartered drugless school and shall pass an examination in certain subjects.

In my opinion this measure was pushed by a mere handful of self-interested persons against the welfare of the entire population of the State of South Dakota.

Quotation from a decision by the supreme court of Ohio: "The failure to give the natural and necessary relief called for by the condition of the patient, in the shape of some positive affirmative action by way of treatment, may be as harmful as the giving of a treatment that is harmful, per se. What the patient often needs immediately is helpful treatment and not merely harmless treatment." Speaking of pathology and diagnosis the court said: "But, obviously as to those two major essentials of professional equipment, the state should set its standards high, so as abundantly to protect the public from the mistakes of ignorance, however well intentioned, from charlatanism, from professional quackery, however well garbed in alluring advertisements, and from all those who would prostitute their profession to a profiteering basis."

Respectfully submitted

J. F. D. COOK, M.D., Secretary

Dr. Alway moved that the report be accepted as read.

Motion seconded and carried.

#### REPORT OF THE COMMITTEE ON HOSPITALS

The Secretary presented the following report, which has been submitted by the Chairman:

There are seventeen standardized hospitals in South Dakota having from fifty to one hundred beds or more. An increase of three over 1925. They are as follows:

	Beds
McKenna Hospital, Sioux Falls.....	125
Sacred Heart Hospital, Yankton.....	100
St. Luke's Hospital, Aberdeen.....	100
Methodist State Hospital, Mitchell.....	95
Peabody Hospital, Webster.....	88
St. Joseph's Hospital, Mitchell.....	85
Moe Hospital, Sioux Falls.....	79
Chamberlain Sanitarium & Hospital, Chamberlain.....	75
Lincoln Hospital, Aberdeen.....	75
Our Lady of Lourdes Hospital, Hot Springs.....	75
St. Joseph's Hospital, Deadwood.....	75
Bartron Hospital, Watertown.....	60
Luther Hospital, Watertown.....	57
St. Mary's Hospital, Pierre.....	55
New Madison Hospital, Madison.....	50
Methodist Deaconess Hospital, Madison.....	50
Lutheran Hospital, Hot Springs.....	50

#### NEW HOSPITALS OPENED

St. John's Hospital, Rapid City, November 1, 1926  
U. S. Veterans' Hospital, Hot Springs, Oct. 20, 1926

#### NUMBER OF HOSPITALS IN STATE

Total No.	Bed Capacity			Total Beds
	Federal	State	Non-Gov't.	
64	857	2,145	1,912	4,914
Respectfully submitted				
W. R. BALL, M.D., Chairman				
R. G. STEVENS, M.D.				
M. M. GROVE, M.D.				

It was moved and seconded that the report be adopted as read.

Motion carried.

#### REPORT OF THE COMMITTEE ON NECROLOGY

The following report was presented by J. B. Vaughn, M.D.:

Mr. President and Delegates of the South Dakota State Medical Association:

Your Committee on Necrology begs leave to offer the following:

It is with deep sorrow we record the heavy toll of the Grim Reaper since January, 1926. Twelve South Dakota physicians have entered that undiscovered country from whose bourne no traveler has returned.

WILLIAM HENRY STILL, White River, South Dakota. Graduate of University Bishop College Faculty of Medicine of Quebec in 1902. Practiced at White River a number of years, age 61, died January 6, 1926, of pernicious anemia.

FRED B. MCGARVEY, Cavour, South Dakota: Member of the Huron District Medical Society; the South



Dakota State Association and the A. M. A.; Graduate of the University of Tennessee College of Medicine in 1900; licensed in South Dakota the same year; active in general practice most all of the time in Cavour since coming to the state. He was a victim of tuberculosis for many years; the energy and courage displayed in his weakened state was remarkable. Died March 19, 1926.

JOHN L. HARRIS, Webster, South Dakota. Graduate of the General Medical College of Chicago, 1875. Practiced in Webster forty-five years; held office of mayor and was superintendent of the County Board of Health; aged 77; died April 16, 1926, of coronary thrombosis.

TRUMAN P. GOTTSCHALK, Sioux Falls, South Dakota. Member of Sioux Falls District Society and the South Dakota State Association and the A. M. A.; Graduate of the University of Indiana School of Medicine, 1923; died June 18, 1926, aged 30.

WILLIAM A. GERMAIN, Sioux Falls, South Dakota, Graduate of the Medical College of Indiana, 1882. Died July 5, 1926; aged 71.

WILLIAM J. EVANS, Flandreau, South Dakota; Graduate of Starling Medical College, Ohio, 1886. Died September 29, 1926, of apoplexy. Aged 66.

JAMES A. GROUCH, Belle Fourche, South Dakota. Graduate of the University of Illinois College of Medicine, 1905. Member of the Black Hills Medical Society and the State Medical Association and the A. M. A. Spanish American War Veteran. Connected with the Homestake Hospital for several years. In general practice in Lead for some time; in general practice in Belle Fourche since 1918. A good citizen and a successful practitioner. Had many friends in the Black Hills. Died November 23, 1926, of myocarditis; aged 50.

GEORGE L. SHERMAN, Frankfort, South Dakota: Graduate of the Northwestern Medical College of St. Joseph, Mo., 1882. Practiced in Frankfort only three months. Died December 25, 1926, of pneumonia.

DICKENSON OBER WHELOCK, Miller, South Dakota. Graduate of the University of Louisville School of Medicine, 1908. Member of the Huron Medical Society and the State Society and A. M. A.; died January 3, 1927, at St. Mary's Hospital, Rochester, Minn., of carcinoma of pancreas and liver; aged 41.

DANIEL GEIB, Detroit, Michigan. Graduate of the University of Michigan, 1879. Member of the East Side Physicians Association of Detroit, Michigan, the Wayne County Medical Society, the State Association of Michigan and the A. M. A. He practiced in Arlington and Cambria, Wisconsin, for a short time, coming to South Dakota in 1887 and locating in Groton, and was in active practice until his removal in 1915. While in South Dakota he was an earnest worker in his profession and in community affairs; and ex-president of the Aberdeen Medical Society and also one of the South Dakota State Councilors from that District. The Doctor was born at Elmira, Ontario; was married in 1880 to Louisa Davis of Ontario. The wife, two sons and two daughters survive him; the two sons are practicing physicians in Detroit.

GEORGE W. SUDDARD, Hayti, South Dakota; Graduate of the Bennet Medical College of Chicago, in 1906. Practiced in Hayti since 1908. Vice-president of Hamlin County Board of Health for a number of years. Died April 29, 1927, as a result of an automobile accident which occurred the preceding day.

I move you that the report be accepted and that the South Dakota State Medical Association extend sympathy to the families and friends of the deceased.

Respectfully submitted,

J. B. VAUGHN, M.D.

G. M. LOWTHIAN, M.D.

It was moved and seconded that the report be adopted as read.

Motion carried.

## APPOINTMENT OF COMMITTEES

### COMMITTEE ON NOMINATIONS

President Riggs appointed the following to serve on this committee:

G. G. Cottam, M.D.	Sioux Falls
C. E. Sherwood, M.D.	Madison
E. A. Pittenger, M.D.	Aberdeen
J. B. Vaughn, M.D.	Castlewood
R. A. Buchanan, M.D.	Wessington

### COMMITTEE ON RESOLUTIONS

President Riggs appointed the following gentlemen to serve on this committee:

C. E. McCauley, M.D.	Aberdeen
A. G. Allen, M.D.	Hot Springs
S. M. Hohf, M.D.	Yankton

Both the Committee on Nominations and that on Resolutions were requested to report on the following day, May 4, 1927.

Dr. Pittenger made a motion that our Delegate to the A. M. A. be instructed to vote in favor of the return of heroin in case this resolution was brought up. Motion seconded by Dr. Peabody. Carried.

On motion, the House of Delegates adjourned at 9:00 P. M., to reconvene on Wednesday, May 4, at 4:30 P. M.

## PROCEEDINGS OF THE BOARD OF COUNCILORS OF THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION

FIRST MEETING—TUESDAY, MAY 3, 1927.

Chairman Dr. Frederick Treon presiding; President T. F. Riggs present. Secretary Cook called the roll and the following Councilors were present:

### COUNCILORS

#### FIRST DISTRICT

R. D. ALWAY, M.D. .... Aberdeen

#### SECOND DISTRICT

H. W. SHERMAN, M.D. .... Doland

FOURTH DISTRICT	
A. A. McLAURIN, M.D.	Pierre
FIFTH DISTRICT	
O. R. WRIGHT, M.D.	Huron
SIXTH DISTRICT	
FREDERICK TREON, M.D.	Chamberlain
SEVENTH DISTRICT	
R. W. MULLEN, M.D.	Sioux Falls
EIGHTH DISTRICT	
J. P. ISAAC, M.D.	Freeman
NINTH DISTRICT	
F. W. MINTY, M.D.	Rapid City
ELEVENTH DISTRICT	
A. E. BOSTROM, M.D.	DeSmet
TWELFTH DISTRICT	
P. D. PEABODY, M.D.	Webster

The Secretary announced a quorum present.

Chairman Treon called for the reading of the minutes and the report of the Treasurer. Secretary Cook announced that the proceedings had been printed in THE JOURNAL-LANCET in full and were an exact copy of the proceedings of the last session.

It was moved and seconded that the report be adopted as printed in THE JOURNAL-LANCET. Motion carried.

Dr. J. F. D. Cook presented the following Financial Report for 1926-1927.

#### Receipts

1926	
May 19, Balance	\$1,904.93
May 24, J. F. Adams	4.00
June 2, F. J. Tobin	8.00
July 2, G. W. Lowthin	8.00
July 10, G. W. Lowthin	4.00
July 14, L. J. Pankow	4.00
Aug. 20, H. T. Kenney	4.00
Sept. 24, G. Fitzgibbon	4.00
Oct. 14, R. V. Overton	4.00
Oct. 14, F. J. Tobin	4.00
Oct. 14, J. A. Hohf	8.00
Nov. 15, F. J. Tobin	4.00
1927	
Jan. 4, A. G. Noble	50.00
Feb. 23, Milbank	35.00
Feb. 23, Madison	10.00
Jan. 13, R. V. Overton	45.00
Jan. 22, H. B. Martin	40.00
Jan. 22, R. V. Overton	5.00
Jan. 22, R. V. Overton	5.00
Feb. 26, R. V. Overton	10.00
Mar. 12, L. J. Pankow	5.00
Mar. 12, A. E. Johnson	110.00
Mar. 12, J. L. Stewart	100.00
Mar. 12, F. J. Tobin	120.00
Mar. 12, L. J. Pankow	260.00
Mar. 14, L. J. Pankow	10.00
Mar. 15, Chas. Flett	10.00
Mar. 16, Chas. Flett	5.00
Mar. 10, W. H. Griffith	44.00

Mar. 10, Chas. Flett	10.00
Mar. 17, W. H. Griffith	11.00
Mar. 18, L. J. Pankow	5.00
Mar. 22, J. A. Hohf	175.00
Apr. 2, Kingsbury County	52.00
Apr. 9, Kingsbury County	13.00
Apr. 9, L. J. Pankow	5.00
Apr. 9, Madison District	55.00
Apr. 9, L. J. Stewart	80.00
Apr. 16, J. R. Westaby	5.00
Apr. 16, A. Einar Johnson	15.00
Apr. 16, L. J. Pankow	5.00
Apr. 27, R. G. Mayer	395.00
Apr. 27, R. G. Mayer	10.00
Apr. 27, Huron District	55.00
May 2, R. G. Mayer and O. W. Katz	5.00
Total	\$3,720.93

#### Disbursements

1926	
May 20, I. H. Snyder	\$ 100.00
June 2, Sioux Falls District	143.05
June 6, Journal-Lancet	345.00
July 8, Cleveland American Printing Co.	23.50
July 14, Thallis Flowers	30.00
July 15, J. F. D. Cook	150.00
Aug. 23, J. F. D. Cook	100.00
Aug. 24, I. H. Snyder	228.45
Aug. 25, Minnesota Loan, Liberty bonds	716.97
Aug. 24, I. H. Snyder	228.45
Sept. 3, Commercial State Bank, Bond for Secretary	2.50
1927	
Jan. 10, J. F. D. Cook	50.00
Jan. 10, Journal-Lancet	370.00
Jan. 10, Stamps	13.50
Feb. 25, Stamped Envelopes	24.38
Feb. 25, Cleveland American Printing Co.	10.00
Mar. 10, Tom McMabee	300.00
Apr. 1, Lily Company	30.00
Apr. 23, J. F. D. Cook	50.00
Apr. 25, J. F. D. Cook, (Telegrams)	18.94
Apr. 25, Cleveland American Printing Co.	93.00
Apr. 26, J. F. D. Cook	250.00
Jan. 15, F. B. Stanton, (Messages)	5.77
Apr. 23, Cash, Stamps	12.00

Total	\$3,067.06
Balance	653.87

May 2, Balance in bank	\$ 653.87
Liberty Bonds	716.97
	\$1,370.84

1927	
Jan. 12, C. D. (Spafford endowment)	\$ 336.34
Mar. 24, S. D. Endowment Association	\$ 336.34

J. F. D. Cook, M.D.  
Secretary-Treasurer.

Chairman Treon appointed an Auditing Committee consisting of Dr. R. D. Alway of the First District; Dr. A. A. McLaurin of the Fourth



District; and Dr. J. P. Isaac of the Eighth District to audit the account of the Treasurer.

Dr. Hopkins: An amendment should be made to our Constitution, I believe. Article 9, Section 1, at present provides that the officers of this Association shall be one president, three vice-presidents, secretary and treasurer, and ten councilors. I move that this be amended to read: "The officers of this Association shall be one president, three vice-presidents, secretary and treasurer, and one councilor from each district." Our Constitution at present provides for only ten councilors and there are thirteen districts. A resolution must lie over one day before it can be acted upon, so I make it now.

The motion was seconded by Dr. Mullen, of Sioux Falls, and carried, and was to be brought up on the following day.

Dr. Cook: Copies of a constitution promulgated by the A. M. A. were mailed out to all of the councilors of the State Medical Association asking them to compare it with the old Constitution and By-laws and be prepared to report at the next session, that is, the 1926 session, but the matter was never taken up.

Dr. Isaac: Why should the resolution come before the Council instead of the House of Delegates?

Dr. Cook: Article 1 says the officers of this Association shall be one president, three vice-presidents, secretary and treasurer and councilors. The officers, except the councilors, should be elected annually. One-half the members of the Council should be elected each year. All officers shall serve until successors are installed. Delegates are elected each year at the annual session of District Society Councilors for two years by House of Delegates so that the Secretary must work through the Board of Councilors and President, and they, the Councilors, are supervisors of their district so to speak. The adoption of the new constitution and by-laws should come before the House of Delegates. There is nothing to prohibit any district from bringing up a candidate for office and presenting his name to the nominating committee. Chapter V says: The House of Delegates, on the first day of the Annual session, shall elect a nominating committee consisting of one from each councilor district.

On motion, the Board of Councilors adjourned at 9:30, P. M., to reconvene on Wednesday, May 4, at 4:30 P. M.

## SECOND MEETING—WEDNESDAY, MAY 4, 1927

The second meeting of the House of Delegates was called to order at the Hotel Marvin-Hughitt, Huron, at 4:30, by the President, Dr. T. F. Riggs, Pierre.

The following Delegates were present:

### FIRST DISTRICT

C. E. McCAULEY, M.D.....Aberdeen  
(Substituting for R. S. Hart, M. D.)  
E. W. WHITCOMB, M.D.....Cresbard  
E. A. PITTENGER, M.D.....Aberdeen

### SECOND DISTRICT

J. B. VAUGHN, M.D.....Castlewood

### THIRD DISTRICT

C. E. SHERWOOD, M.D.....Madison

### FOURTH DISTRICT

A. A. McLAURIN, M.D.....Pierre

### SIXTH DISTRICT

W. R. BALL, M.D.....Mitchell

O. J. MABEE, M.D.....Mitchell

J. F. MALLOY, M.D.....Mitchell

### SEVENTH DISTRICT

P. E. BRANDON, M.D.....Sioux Falls

### EIGHTH DISTRICT

D. S. KALAYJIAN, M.D.....Barker

E. M. STAUBBURY, M.D.....Vermilion  
(Substituting for J. E. Trierweiler, M.D.)

### NINTH DISTRICT

A. G. ALLEN, M.D.....Hot Springs

J. L. STEWART, M.D.....Lead

### ELEVENTH DISTRICT

E. H. GROVE, M.D.....Arlington

### TWELFTH DISTRICT

G. H. LOWTHIAN, M.D.....Milbank

### THIRTEENTH DISTRICT

G. E. BURMAN, M.D.....Carthage

## REPORTS OF COMMITTEES

### COMMITTEE ON RESOLUTIONS

Dr. C. E. McCauley read Dr. Hopkins' resolution, as follows:

RESOLVED, That Article 9, Section 1, of our Constitution which reads as follows:

"The officers of this Association shall be one president, three vice-presidents, a secretary and treasurer, and ten councilors," be amended to read:

"The officers of this Association shall be one president, three vice-presidents, a secretary and treasurer, and one councilor from each district."

It was moved that the resolution be adopted as read.

Motion seconded and carried.

Dr. Riggs' resolution, as follows, was read:

In recognition of the efficient service rendered to the Medical Association of the State Health Laboratory at Vermilion, the South Dakota State Medical Association does hereby adopt the following resolution:

BE IT RESOLVED that we unqualifiedly commend the splendid work carried on by the State Health Laboratory and that its Director be complimented for the value of the services rendered and the high degree of efficiency to which the Laboratory has attained.

BE IT FURTHER RESOLVED that a copy of this resolution be spread upon the minutes of this Association and a copy sent the Director, Dr. Ohlmacher.

(Signed) C. E. McCauley, M.D.

A. G. Allen, M.D.

S. M. Hohf, M.D.

Dr. J. P. Isaac made a motion that the president appoint a committee to revise our present

constitution according to our present needs, patterning after the sample constitution recommended by the American Medical Association.

Motion seconded by Dr. Bostrom. Carried.

After some discussion, Dr. Treon made a motion that we dispense with the rules and recognize a Councilor from each district.

Seconded by Dr. McCauley. Carried.

A committee to look into the Constitution and By-laws was appointed, consisting of the following:

Dr. J. P. Isaac, Chairman  
Dr. R. D. Alway  
Dr. N. K. Hopkins

The Committee on Nominations submitted the following persons for office:

Dr. S. M. Hohf, nominated as President.  
Dr. N. K. Hopkins, First Vice-president.  
Dr. L. N. Grosvenor, Second Vice-president.  
Dr. P. D. Peabody, Third Vice-president.  
Dr. J. F. D. Cook, holds over as Secretary-Treasurer.

The following Councilors were nominated:

Dr. J. R. Westaby, Third District  
Dr. O. R. Wright, Fifth District  
Dr. Frederick Treon, Sixth District  
Dr. R. W. Mullen, Seventh District  
Dr. P. D. Peabody, Twelfth District  
Dr. G. E. Burman, Thirteenth District

Delegates to the American Medical Association:

Dr. W. R. Ball, 1927-29, Mitchell  
Dr. T. F. Riggs, Alternate, 1927-29, Pierre

Dr. A. G. Allen of Hot Springs addressed the members as follows:

#### PLACE OF MEETING—1928

A motion was made that the South Dakota State Medical Association meet at Watertown next year (1928).

The Black Hills members would like to have the Association meet in the Black Hills next year. The gravel road to Hot Springs will be completed by that time, and if the weather conditions do not favor automobile transportation, a through train can be had. For use during the convention transportation can be had to accommodate all of the members to points of interest in the Hills. Dr. Ball reports that in the little town of Hot Springs they have one thousand hospital beds. That means there is an immense amount of clinical material that is unused by the medical profession of the state. I would like to see the time when we might have a complete medical course available to students within our own state borders. South Dakota is the only state that has to send its medical students out for a complete course. The trend in the large cities is toward the development of specialists. I hope that some day some of our western states will provide us with

doctors who will be willing to go out into the country districts, and that South Dakota will lead the way. The matter has been taken up by the Committee on Education and has received their indorsement. By bringing the medical men of the State of South Dakota over to the western part of the State, it will give them the impetus that is necessary to get this plan into operation. There are 250 rooms in the hotel and plenty of facilities to entertain the members of the convention. I would like to see the medical convention meet out in our part of the state this coming year.

Dr. Treon: When we attended a convention in the Black Hills before, we had a very small meeting but a very fine meeting. I want to say for the Doctor's satisfaction that there is not a spot I would rather go to than to the Black Hills. When my son and his family come out I expect to take them out to the Black Hills and show them the wonders of that wonderful land. But I am just thinking if it would be wise to go out there and have a half meeting after having such good meetings. It is a question whether to go now. I admit everything the Doctor says, but is it wise? I want to go, and if you decide this is the place to go, I am going to go.

Dr. O. R. Wright: I have been to a convention in the Black Hills, and it was the hottest place I have ever been. Of course, if it is just a matter of entertainment, it could be easily settled. But this is a business proposition. Ninety-five per cent of the men come here more as a business than as an entertainment. They want to find out something and get that information from men who can get here as easily and conveniently as they possibly can. We find that conventions held in central points have been a success. However, conventions at outside points have not been a success. If you can get to the convention and back in twenty-four hours it means more men will come. The majority are this side of the Missouri River. It takes me four days to make the trip to the Black Hills and only a short time to go to any of the central points.

Dr. C. E. McCauley: Is it not a fact that if the meeting is held at Aberdeen we do not get many from Sioux Falls, and if it is held at Sioux Falls we do not get many from Aberdeen? There are a lot of fellows who will not go if it is held in the Black Hills. Article 8 provides as follows: The Association shall hold an annual session during which there shall be held daily meetings which shall be open to all members and their guests. The time and place for holding each annual meeting shall be fixed by the House of Delegates.

Dr. A. G. Allen: When the meetings are held in this part of the state our speakers come largely from St. Paul, Minneapolis, and Chicago. Now, Hot Springs is just over night from Denver, less than twenty-four hours from Omaha and there are vast numbers of wonderful men there who would jump at the chance to meet with the Association and give us a new viewpoint.

Dr. J. P. Isaac: I move that we amend the motion before the House to have our next annual meeting at Hot Springs, instead of Watertown.

Dr. J. L. Stewart seconded the motion.



Before the motion could be put to a vote, Dr. Vaughn rose to speak.

Dr. Vaughn: We have gone to the Hills a number of times, and while our attendance has always been small, in 1909 we had a right good meeting, but in the past few years our attendance has been increasing and our Association seems to be thriving, and it looks to me as though we want to stay in the central portion of the state and not throw a wet blanket on our increasing attendance by going so far away. I have here an invitation from the Chamber of Commerce, Hotel Lincoln, and medical men of Watertown, and it looks to me as though the best thing to do is for this Association to meet at Watertown next year, because it seems we should go to where we can get the largest attendance. We have never been able to get a large attendance west of the river.

Dr. D. S. Kalayjian: Nineteen years have passed and conditions have changed since then.

A vote on the motion was then taken. Fifteen in favor; opposing nine. Motion carried.

The date of the convention was discussed.

Dr. J. L. Stewart: I suggest that the meeting be had at such a time that we can take in the Belle Fourche Round-up. That alone is worth the trip and it includes the fourth of July.

Dr. R. D. Alway made a motion that the time be left to the local committee to decide, consulting with the secretary. Motion seconded and carried.

A motion to adjourn the House of Delegates was made by Dr. J. B. Vaughn, and seconded by Dr. A. A. McLaurin. Meeting declared adjourned at 5:10 p. m.

## SECOND MEETING—WEDNESDAY, MAY 4, 1927

The Board of Councilors was called to order at 5:10 p. m. on May 4, 1927, immediately following the adjournment of the House of Delegates.

The following Councilors were present:

### FIRST DISTRICT

R. D. ALWAY, M.D.....Aberdeen

### SECOND DISTRICT

H. W. SHERWOOD, M.D.....Doland

### FOURTH DISTRICT

A. A. McLAURIN, M.D.....Pierre

### FIFTH DISTRICT

O. R. WRIGHT, M.D.....Huron

### SIXTH DISTRICT

FREDERICK TREON, M.D.....Chamberlain  
(Chairman)

### SEVENTH DISTRICT

R. W. MULLEN, M.D.....Sioux Falls

### EIGHTH DISTRICT

J. P. ISAAC, M.D.....Freeman

### NINTH DISTRICT

F. W. MINTY, M.D.....Rapid City

### ELEVENTH DISTRICT

A. E. BOSTROM, M.D.....DeSmet

### TWELFTH DISTRICT

P. D. PEABODY, M.D.....Webster

President Riggs, Secretary Cook, and several Delegates were also present, as well as the Vice-president.

Dr. R. D. Alway, Chairman, reported that the Auditing Committee had examined the accounts of the Secretary-Treasurer and found them correct in every detail.

Dr. Alway moved that the report of the Treasurer and the report of the Auditing Committee be accepted and filed.

Motion seconded and unanimously carried.

Dr. Isaac moved that any rules that might exist be suspended and a vote cast for the present officers. Motion seconded and carried. All present officers nominated to succeed themselves. Frederick Treon, Chairman, and J. F. D. Cook, Secretary.

A discussion concerning the payment of the expenses of the speakers then arose.

Dr. Riggs: My impression is that the Association was to pay the hotel expenses of the outsiders who take part in the program, but nothing else, and the local committee was to have charge of the entertainment. I wrote the secretary of the local district society and sent a copy of the letter to Dr. Cook. Dr. Cook notified me that so far as he knew there was no authority for the State Medical Association to pay the transportation of the men who came in to help on the program. Dr. Cook said he would bring it up at the Board of Councilors' meeting.

Dr. R. W. Mullen, of Sioux Falls, made a motion that the local society pay all the hotel expenses of the outsiders on the program. Motion seconded by Dr. Riggs.

Motion was withdrawn and a new motion made: That the secretary-treasurer be authorized to take care of the hotel expenses of all outsiders appearing on the program of the South Dakota State Medical Association. Motion seconded and carried.

Dr. Cook: There is a membership of 356. At \$5.00 a member, that amounts to \$1,780. Expenses have been increased this year, there being a per capita expenditure of \$6.40. It will be necessary to make some arrangement to take care of the expenses.

A motion was made that the meeting of the Board of Councilors be adjourned. Motion seconded and carried.

## THIRD MEETING—THURSDAY, MAY 5, 1927

The third meeting of the House of Delegates was called to order at the Hotel Marvin-Hughitt, Huron, at 12:00 noon, by the President, Dr. T. F. Riggs, Pierre.

The following members were present:

FIRST DISTRICT	
R. D. ALWAY, M.D.	Aberdeen
SECOND DISTRICT	
H. W. SHERWOOD, M.D.	Doland
FOURTH DISTRICT	
A. A. McLAURIN, M.D.	Pierre
FIFTH DISTRICT	
O. R. WRIGHT, M.D.	Huron
SEVENTH DISTRICT	
R. W. MULLEN, M.D.	Sioux Falls
EIGHTH DISTRICT	
J. P. ISAAC, M.D.	Freeman
ELEVENTH DISTRICT	
A. E. BOSTROM, M.D.	DeSmet
TWELFTH DISTRICT	
P. D. PEABODY, M.D.	Webster
THIRTEENTH DISTRICT	
G. E. BURMAN, M.D.	Carthage

President Riggs, Secretary Cook, and several delegates were also present, as well as the vice-presidents.

Dr. Riggs: The report of the nomination committee was read, and it is now in order for the House of Delegates to elect the officers.

The nominations were read as follows:

Dr. S. M. Hohf, for President  
 Dr. N. K. Hopkins, First Vice-president  
 Dr. L. N. Grosvenor, Second Vice-president  
 Dr. P. D. Peabody, Third Vice-president

Delegates to the American Medical Association:

W. R. Ball, M.D., Delegate 1927-29  
 T. F. Riggs, M.D., Alternate 1927-29

## PLACE OF MEETING

It was announced that Hot Springs would be the place of the meeting of the South Dakota State Medical Association in 1928.

The report of the Nomination Committee was accepted as read, and on motion the nominees were elected to office.

The nominations for Councilors were as follows:

THIRD DISTRICT	
J. R. WESTABY, M.D.	Madison
FIFTH DISTRICT	
O. R. WRIGHT, M.D.	Huron
SIXTH DISTRICT	
FREDERICK TREON, M.D.	Chamberlain
SEVENTH DISTRICT	
R. W. MULLEN, M.D.	Sioux Falls

## TWELFTH DISTRICT

A. L. SEVERIDE, M.D. .... Webster

## THIRTEENTH DISTRICT

G. E. BURMAN, M.D. .... Carthage

It was moved and seconded that these Councilors be elected. Unanimously carried.

Dr. Riggs announced that the report of the Committee on the Constitution would be brought up next year, and until that time the Association would continue to be governed by the present Constitution which would be about two years from now.

The House of Delegates adjourned and the Board of Councilors met following adjournment of the House of Delegates. Frederick Treon, Chairman.

## THIRD MEETING OF COUNCILORS

It was the pleasure of the assembled Councilors and Delegates to hear Dr. W. A. Jones, Editor of THE JOURNAL-LANCET, in a short address.

Dr. Jones: THE JOURNAL-LANCET is ready at any time to take up any suggestions that the Association may offer, and I do not know that I am violating any confidence by saying that if you will appoint a committee from these Councilors and Delegates to confer as to what you would like and what you would like done to meet with a similar committee from North Dakota and talk it over and see what you would like to have, we will do all we can to help you out. We will do what we can if you get together and decide you want to combine, but the establishment, maintenance and control of a medical journal is no child's play. It takes a great deal of time, a great deal of money, and can be published much more cheaply at some other place than it could be among yourselves.

If you start in with a bulletin, I want to advise you, promptly forget it. It cannot be conducted as it should be without a great deal of work, and in the end you will lose all the money you have in it.

It was decided that no business change would be made because it could not be handled financially or any other way.

Meeting adjourned at 12:30.

J. F. D. COOK, M.D.  
 Secretary-Treasurer

TRANSACTIONS OF THE  
SCIENTIFIC MEETING

## FIRST DAY—WEDNESDAY, MAY 4, 1927

The first meeting of the Forty-Sixth Annual Session of the South Dakota State Medical Association was called to order in the Elks' Hall of the Marvin-Hughitt Hotel, Huron, at 9:30 A. M., on Wednesday, May 4, 1927, by the President, Dr. T. F. Riggs, Pierre.



Dr. J. C. Ohlmacher, Director of State Health Laboratory, Vermilion, presented a paper entitled "Anatomical and Pathological Evidence of Arrest or Cure in Certain Cases of Diabetes Mellitus: A Plea for Early Recognition and Treatment."

Dr. F. C. Rodda, Associate Professor of Pediatrics, University of Minnesota, gave a clinic on "Pediatrics."

The Association adjourned at 12:00 M. to reconvene at 2:00 P. M.

#### AFTERNOON MEETING—MAY 4, 1927

The second meeting was called to order at 2:10 P. M. by the President, Dr. T. F. Riggs, Pierre, who made a report as president.

Dr. A. L. Severide, Peabody Clinic, Webster, read a paper entitled "Diagnosis of Stomach and Intestinal Diseases."

Dr. F. C. Rodda, of Minneapolis, Minn., addressed the Association on "Prophylactic and Therapeutic Treatment of Communicable Diseases."

Dr. John C. Coulter, Head of the Department of Physiotherapy, Northwestern University, Chicago, read a paper on "Physiotherapy."

This concluded the program for the day, and the Association adjourned at 5:30 P. M., to reconvene at 9:00 the following day, Thursday, May 5.

A banquet was given at the Marvin-Hughitt Hotel that evening.

A public meeting at the Presbyterian Church was held during the evening, at which Dr. Wm. O'Brien gave a talk on "Cancer."

#### SECOND DAY—THURSDAY, MAY 5, 1927

The third meeting was called to order by the President, Dr. T. F. Riggs, Pierre, at 9:15.

Dr. C. W. Hopkins, Chief Surgeon for the Chicago & Northwestern Railway Company of Chicago addressed the Association on "Head Injuries: Methods of Diagnosis and Treatment." (Lantern slides).

Dr. David Mayo Berkman, Associate Professor of Medicine, University of Minnesota, Mayo Clinic, Rochester, Minnesota, presented a paper on "Dyspepsia."

Dr. H. L. Ulrich, Associate Professor of Medicine, University of Minnesota, gave a "Medical Clinic."

The Association adjourned at 12:00 M. to reconvene at 1:30 P. M.

#### AFTERNOON MEETING—THURSDAY, MAY 5, 1927

The fourth meeting was called to order at 1:45 by the President, Dr. T. F. Riggs, Pierre.

Secretary Cook made a brief report of the proceedings of the House of Delegates. It was reported that Hot Springs would be the meeting place of the next Convention.

Dr. Riggs introduced the President-elect, Dr. S. M. Hohf.

Dr. Wm. A. O'Brien of the University Hospital, Minneapolis, talked to the Association on "Cancer." (Lantern slides.) Dr. O'Brien also talked on "Chiropractics and Their Leader and Founder, Dr. Palmer."

As this completed the program the session was declared adjourned at 5:00 P. M., *sine die*.

J. F. D. Cook, M.D., Secretary

## DISTRICT AND COUNTY ROSTER

## ABERDEEN DISTRICT MEDICAL SOCIETY—NO. 1

PRESIDENT  
Bates, W. A. \_\_\_\_\_ Aberdeen

SECRETARY  
Mayer, R. G. \_\_\_\_\_ Aberdeen

Adams, B. A. \_\_\_\_\_ Bristol  
Adams, J. F. \_\_\_\_\_ Aberdeen  
Aldrich, H. H. \_\_\_\_\_ Hitchcock  
Allen, J. M. \_\_\_\_\_ Rosholt  
Alway, J. D. \_\_\_\_\_ Aberdeen  
Alway, R. D. \_\_\_\_\_ Aberdeen  
Baer, T. H. \_\_\_\_\_ Timber Lake  
Bates, W. A. \_\_\_\_\_ Aberdeen  
Brenckle, J. F. \_\_\_\_\_ Northville  
Bruner, J. E. \_\_\_\_\_ Frederick  
Calene, J. L. \_\_\_\_\_ Aberdeen  
Chapman, W. S. \_\_\_\_\_ Redfield  
Cook, J. F. D. \_\_\_\_\_ Langford  
Cooley, F. H. \_\_\_\_\_ Redfield  
Countryman, G. E. \_\_\_\_\_ Aberdeen  
Crain, C. F. \_\_\_\_\_ Redfield  
Crain, F. M. \_\_\_\_\_ Redfield  
Creamer, Frank H. \_\_\_\_\_ Dupree  
Curtis, J. E. \_\_\_\_\_ Lemmon  
Deertz, J. J. \_\_\_\_\_ Brentford  
Dinsmore, W. E. \_\_\_\_\_ Claremont  
Dunn, J. E. \_\_\_\_\_ Groton  
Elward, L. R. \_\_\_\_\_ Ashton  
Farrell, W. D. \_\_\_\_\_ Aberdeen  
Freyberg, F. W. \_\_\_\_\_ Aberdeen

George, W. A. \_\_\_\_\_ Selby  
Gerdes, O. H. \_\_\_\_\_ Eureka  
Girard, A. G. \_\_\_\_\_ Hoven  
Hart, R. S. \_\_\_\_\_ Groton  
Herman, H. J. \_\_\_\_\_ Webster  
Hill, Robert \_\_\_\_\_ Ipswich  
Hurley, S. E. \_\_\_\_\_ Gettysburg  
Hyden, Anton \_\_\_\_\_ Bowdle  
Jackson, E. B. \_\_\_\_\_ Aberdeen  
Jacobey, W. K. \_\_\_\_\_ Mobridge  
Johnston, M. C. \_\_\_\_\_ Aberdeen  
Jones, R. R. \_\_\_\_\_ Britton  
Jones, T. D. \_\_\_\_\_ Bowdle  
Katz, O. W. \_\_\_\_\_ Seneca  
King, H. I. \_\_\_\_\_ Aberdeen  
King, Owen \_\_\_\_\_ Aberdeen  
Kraushaar, F. J. O. \_\_\_\_\_ Aberdeen  
Kutnewsky, J. K. \_\_\_\_\_ Redfield  
Lavery, C. J. \_\_\_\_\_ Aberdeen  
Lister, F. E. \_\_\_\_\_ Faith  
Lowe, C. E. \_\_\_\_\_ Mobridge  
Lundquist, C. G. \_\_\_\_\_ Leola  
McCarthy, P. V. \_\_\_\_\_ Aberdeen  
McCauley, C. E. \_\_\_\_\_ Aberdeen  
Mayer, R. G. \_\_\_\_\_ Aberdeen  
Mertens, J. J. \_\_\_\_\_ Gettysburg  
Michael, L. F., San Diego, Calif.  
Miller, Frank \_\_\_\_\_ Aberdeen  
Miller, H. \_\_\_\_\_ Conde

Miller, J. F. \_\_\_\_\_ Andover  
Murdy, B. C. \_\_\_\_\_ Aberdeen  
Murdy, R. C. \_\_\_\_\_ Aberdeen  
Murdy, R. L. \_\_\_\_\_ Aberdeen  
Murphy, T. W. \_\_\_\_\_ Pierpont  
Olson, C. L. \_\_\_\_\_ McIntosh  
Olson, C. O. \_\_\_\_\_ Groton  
Pittenger, E. A. \_\_\_\_\_ Aberdeen  
Potter, Geo. W. \_\_\_\_\_ Redfield  
Ramsey, E. T. \_\_\_\_\_ Clark  
Ranney, T. P. \_\_\_\_\_ Aberdeen  
Robbins, Emma E. \_\_\_\_\_ Aberdeen  
Rice, R. B. \_\_\_\_\_ Britton  
Sargent, C. E. \_\_\_\_\_ Isabel  
Schmidt, I. H. \_\_\_\_\_ Faulkton  
Seeman, C. A. \_\_\_\_\_ Tulare  
Seeman, H. J. \_\_\_\_\_ Rockham  
Senescall, C. R. \_\_\_\_\_ Veblen  
Totten, F. C. \_\_\_\_\_ Lemmon  
Twining, G. H. \_\_\_\_\_ Mobridge  
Waldorf, C. E. \_\_\_\_\_ Redfield  
Walker, J. F. \_\_\_\_\_ Bison  
Weishaar, C. H. \_\_\_\_\_ Aberdeen  
Whitcomb, E. W. \_\_\_\_\_ Cresbard  
White, W. E. \_\_\_\_\_ Ipswich  
Whiteside, J. D. \_\_\_\_\_ Aberdeen  
Wilson, R. D. \_\_\_\_\_ Aberdeen  
Von Wohleben, G. \_\_\_\_\_ Herreid  
Zachritz, G. F. \_\_\_\_\_ Faulkton

## WATERTOWN DISTRICT MEDICAL SOCIETY—NO. 2

PRESIDENT  
Richards, G. H. \_\_\_\_\_ Watertown

SECRETARY  
Johnson, A. E. \_\_\_\_\_ Watertown

Bartron, H. J. \_\_\_\_\_ Watertown  
Bates, J. S. \_\_\_\_\_ Clear Lake  
Boutelle, L. E. \_\_\_\_\_ Indianapolis, Ind.  
Campbell, R. F. \_\_\_\_\_ Watertown  
Crandell, W. G. \_\_\_\_\_ Watertown  
Crawford, J. H. \_\_\_\_\_ Watertown

Freeburg, H. M. \_\_\_\_\_ Watertown  
Hammond, M. J. \_\_\_\_\_ Watertown  
Hendrickson, Paul, \_\_\_\_\_ Vienna  
Johnson, A. Einar \_\_\_\_\_ Watertown  
Kenney, H. T. \_\_\_\_\_ Watertown  
Kertesz, G. J. V. E., Pine Riv. Minn.  
Koren, Finn \_\_\_\_\_ Watertown  
McIntyre, P. S. \_\_\_\_\_ Bradley  
Magee, W. G. \_\_\_\_\_ Watertown  
Martin, P. T. \_\_\_\_\_ Gary  
Parsons, H. C. \_\_\_\_\_ Watertown

Paulson, A. J. \_\_\_\_\_ Watertown  
Richards, G. H. \_\_\_\_\_ Watertown  
Rowe, A. N. \_\_\_\_\_ Estelline  
Scallin, P. R. \_\_\_\_\_ Clark  
Schwendener, J. E. \_\_\_\_\_ Bryant  
Sherwood, H. W. \_\_\_\_\_ Doland  
Smith, S. W. \_\_\_\_\_ Watertown  
Staley, F. H. \_\_\_\_\_ Vienna  
Tarbell, H. A. \_\_\_\_\_ Watertown  
Vaughn, J. B. \_\_\_\_\_ Castlewood  
Williams, C. A. \_\_\_\_\_ Doland

## MADISON DISTRICT MEDICAL SOCIETY—NO. 3

PRESIDENT  
Torwick, E. E. \_\_\_\_\_ Volga

SECRETARY  
Westaby, J. R. \_\_\_\_\_ Madison

Baughman, D. S. \_\_\_\_\_ Madison  
Engelson, C. J. \_\_\_\_\_ Brookings

Green, B. T. \_\_\_\_\_ Brookings  
Hickman, G. L. \_\_\_\_\_ Bryant  
Hoagland, C. C. \_\_\_\_\_ Madison  
Jordan, L. E. \_\_\_\_\_ Chester  
Kellogg, H. E. \_\_\_\_\_ Madison  
Miller, H. A. \_\_\_\_\_ Brookings  
Sherwood, C. E. \_\_\_\_\_ Madison

Stoll, A. H. \_\_\_\_\_ Brookings  
Tillisch, H. \_\_\_\_\_ Brookings  
Torwick, E. E. \_\_\_\_\_ Volga  
Westaby, J. R. \_\_\_\_\_ Madison  
Westaby, R. S. \_\_\_\_\_ Madison  
Youtz, H. L. \_\_\_\_\_ Brookings

## PIERRE DISTRICT MEDICAL SOCIETY—NO. 4

PRESIDENT  
Stout, T. E. \_\_\_\_\_ Pierre

SECRETARY  
Martin, H. B. \_\_\_\_\_ Harrold

Hart, B. M. \_\_\_\_\_ Onida  
McLaurin, A. A. \_\_\_\_\_ Pierre  
Martin, H. B. \_\_\_\_\_ Harrold  
Minard, R. W. \_\_\_\_\_ Midland

Morrissey, R. J. \_\_\_\_\_ Ft. Perre  
Northrup, F. A. \_\_\_\_\_ Pierre  
Riggs, T. F. \_\_\_\_\_ Pierre  
Stout, Trent E. \_\_\_\_\_ Pierre

## HURON DISTRICT MEDICAL SOCIETY—NO. 5

PRESIDENT  
Saylor, H. D. \_\_\_\_\_ Huron

SECRETARY  
Griffith, W. H. \_\_\_\_\_ Huron

Buchanan, R. A. \_\_\_\_\_ Wessington  
Cogswell, M. E. \_\_\_\_\_ Wolsey  
Gearhart, N. B. \_\_\_\_\_ Huron  
Gregory, D. A. \_\_\_\_\_ Miller

Griffith, W. H. \_\_\_\_\_ Huron  
Grosvenor, L. N. \_\_\_\_\_ Huron  
Hagin, J. C. \_\_\_\_\_ Miller  
Launspach, G. W. \_\_\_\_\_ Huron  
McKie, J. F. \_\_\_\_\_ Wessington  
Paddleford, J. F. \_\_\_\_\_ Miller  
Saxton, W. H. \_\_\_\_\_ Huron  
Saylor, H. L. \_\_\_\_\_ Huron  
Scheib, A. P. \_\_\_\_\_ Hitchcock

Sewell, H. D. \_\_\_\_\_ Huron  
Shirley, J. C. \_\_\_\_\_ Huron  
Sigler, G. V. \_\_\_\_\_ Highmore  
Sprague, B. H. \_\_\_\_\_ Huron  
Taylor, E. B. \_\_\_\_\_ Huron  
Thomas, Benj. \_\_\_\_\_ Huron  
Tschetter, J. S. \_\_\_\_\_ Huron  
Wood, T. J. \_\_\_\_\_ Huron  
Wright, O. R. \_\_\_\_\_ Huron



## MITCHELL DISTRICT MEDICAL SOCIETY—NO. 6

PRESIDENT		Delaney, W. A. _____	Mitchell	Lloyd, J. H. _____	Mitchell
Maytum, W. J. _____		Dick, L. C. _____	Spencer	Mabee, O. J. _____	Mitchell
SECRETARY		Doering, R. E. _____	Tripp	Malloy, J. F. _____	Mitchell
Tobin, F. J. _____		Farnsworth, C. P. _____	Chamberlain	Maytum, W. J. _____	Alexandria
Auld, C. V. _____		Gillis, F. D. _____	Mitchell	Mizener, Mark _____	Parkston
Ball, W. R. _____		Halleck, P. P. _____	Letcher	Payne, R. H. _____	Tripp
Beukelman, W. H. _____		Jones, E. W. _____	Mitchell	Smiley, T. B. _____	Mt. Vernon
Bobb, B. A. _____		Kelly, R. A. _____	Mitchell	Tobin, F. J. _____	Mitchell
Case, T. J. _____		Kenton, Chas. B. _____	Artesian	Treon, F. _____	Chamberlain
Crawford, R. A. _____		Kidd, F. S. _____	Woonsocket	Waldner, J. L. _____	Parkston
		Kimble, O. A. _____	Murdo	Young, E. M. _____	Mitchell

## SIOUX FALLS DISTRICT MEDICAL SOCIETY—NO. 7

PRESIDENT		Gage, E. E. _____	Sioux Falls	Pankow, L. J. _____	Sioux Falls
Parke, L. L. _____		Gregg, J. B. _____	Sioux Falls	Parke, L. L. _____	Canton
SECRETARY		Grove, A. F. _____	Dell Rapids	Perkins, E. L. _____	Sioux Falls
Pankow, L. J. _____		Grove, M. M. _____	Dell Rapids	Putnam, E. D. _____	Sioux Falls
Billion, T. J. _____		Hannon, L. J. _____	Hartford	Putnam, F. I., Ellensburg, Wash.	
Billingsley, P. R. _____		Hanson, O. L. _____	Valley Springs	Reagan, R. _____	Sioux Falls
Bliss, P. D. _____		Hill, L. G. _____	Sioux Falls	Rider, A. S. _____	Flandreau
Brandon, P. E. _____		Housman, W. McK. _____	Sioux Falls	Roberts, W. P. _____	Sioux Falls
Cottam, G. G. _____		Hummer, H. R. _____	Canton	Stegeman, S. B. _____	Salem
Craig, D. W. _____		Keller, S. A. _____	Sioux Falls	Stenberg, E. S. _____	Sioux Falls
Culver, C. F. _____		Keller, W. F. _____	Sioux Falls	Stern, M. A. _____	Sioux Falls
De Vall, F. C. _____		Lamb, H. H. _____	Sioux Falls	Stevens, G. A. _____	Sioux Falls
Dickinson, W. E. _____		Larson, M. W. _____	Canton	Stevens, R. G. _____	Sioux Falls
Donahoe, S. A. _____		Lewison, E. _____	Canton	Subera, H. W. _____	Sioux Falls
Donahoe, W. E. _____		Lokke, B. R. _____	Egan	Tufts, A. H. _____	Sioux Falls
Eagan, J. B. _____		Long, A. G. _____	Sioux Falls	Turner, J. F. _____	Canton
Egan, M. H. _____		Meyer, H. C. E. _____	Sioux Falls	Van Demark, G. E. _____	Sioux Falls
Ericksen, O. C. _____		Moe, A. J. _____	Sioux Falls	Vaughn, L. B. _____	Hurley
Forsberg, C. W. _____		Mullen, R. W. _____	Sioux Falls	Volin, H. P. _____	Lenox
Fulford, G. H. _____		Nessa, N. J. _____	Sioux Falls	Wendt, C. L. _____	Canton
Gage, A. E. _____		Nilsson, F. C. _____	Sioux Falls	Zimmerman, Goldie _____	Sioux Falls

## YANKTON DISTRICT MEDICAL SOCIETY—NO. 8

PRESIDENT		Crecelius, H. A. _____	Volin	Klima, H. _____	Tyndall
Stansbury, E. M. _____		Cruickshank, T. _____	Vermilion	Landmann, G. A. _____	Scotland
SECRETARY		Duguid, J. O. _____	Springfield	Langley, C. S. _____	Lake Andes
Hohf, J. A. _____		Freshour, I. M. _____	Yankton	Leighton, I. W. _____	Scotland
Adams, G. S. _____		Frink, R. P. _____	Wagner	Moore, F. A. _____	Lesterville
Beall, L. F. _____		Hohf, J. A. _____	Yankton	Morehouse, E. M. _____	Yankton
Berry, S. G. _____		Hohf, S. M. _____	Yankton	Remey, C. E. _____	Chicago
Bigler, Lottie G. _____		Isaac, J. P. _____	Freeman	Smith, F. C. _____	Yankton
Blezek, F. M. _____		Johnson, G. E. _____	Avon	Stansbury, E. M. _____	Vermilion
Braddock, W. H., Jarbidge, Nev.		Joyce, E. _____	Hurley	Sweezy, F. A. _____	Wakonda
Brookman, L. J. _____		Kalayjian, D. S. _____	Parker	Swett, C. H. _____	Wagner
Burkland, P. R. _____		Kauffman, E. J. _____	Marion	Trierweiler, J. E. _____	Yankton
Bushnell, Wm. F. _____		Keeling, C. M. _____	Springfield	Willhite, F. V. _____	Redfield

## BLACK HILLS DISTRICT MEDICAL SOCIETY—NO. 9

PRESIDENT		Hargens, C. W. _____	Hot Springs	Morsman, C. F. _____	Hot Springs
Ramsey, Guy _____		Heinemann, A. A. _____	Wasta	Newby, H. D. _____	Rapid City
SECRETARY		Hodges, V. R. _____	Lead	O'Toole, T. F. _____	New Underwood
Stewart, J. L. _____		Howe, F. S. _____	Deadwood	Owen, N. T. _____	Rapid City
Allen, A. G. _____		Ince, H. J. T. _____	Rapid City	Pangburn, M. W. _____	Rapid City
Barker, J. A. _____		Jackson, A. S. _____	Lead	Pemberton, M. O. _____	Deadwood
Bentley, W. S. _____		Jackson, R. J. _____	Rapid City	Price, C. R. _____	Orient
Chassell, J. L. _____		Jernstrom, R. E. _____	Wall	Raber, D. D. _____	Philip
Clough, F. E. _____		Long, Martin _____	Custer	Radusch, Freda _____	Rapid City
Crane, H. L. L'Oryra, Peru, S. A.		Mattox, N. E. _____	Lead	Ramsey, Guy _____	Philip
Ewald, P. P. _____		Miller, George _____	Spearfish	Rogers, J. S. _____	Hot Springs
Fasser, A. O. _____		Mills, G. W. _____	Wall	Stewart, J. L. _____	Lead
Fleeger, R. B. _____		Minty, F. W. _____	Rapid City	Walsh, J. M. _____	Rapid City
Geyerman, P. F. _____		Mitchell, Fred L. _____	Newell	Woodworth, R. E. _____	Sanator
		Morse, W. E. _____	Rapid City	Young, Blaine A. _____	Hot Springs

## ROSEBUD DISTRICT MEDICAL SOCIETY—NO. 10

PRESIDENT		Carmack, A. O. _____	Colome	Quinn, J. F. _____	Gregory
Matousek, W. J. _____		Kenaston, H. R. _____	Bonesteel	Quinn, R. J. _____	Burke
SECRETARY		Malster, R. M. _____	Carter	Quinn, W. M. _____	Winner
Overton, R. V. _____		Matousek, W. J. _____	Dallas	Salladay, I. R. _____	White River
Bouza, F. E. _____		Murnan, H. A. _____	Winner	Waterman, J. C. _____	Catarina, Tex.
Bryant, F. A. _____		Overton, R. V. _____	Winner	Wilson, F. D. _____	Winner

## KINGSBURY DISTRICT MEDICAL SOCIETY—NO. 11

PRESIDENT  
Feige, C. A. \_\_\_\_\_ Iroquois  
SECRETARY  
Stockdale, C. P. \_\_\_\_\_ Erwin  
Ahern, J. J. \_\_\_\_\_ Oldham  
Bostrom, A. E. \_\_\_\_\_ De Smet

Brimmer, K. W. \_\_\_\_\_ Volga  
Butler, C. A. \_\_\_\_\_ Lake Preston  
Dickey, J. B. \_\_\_\_\_ Iroquois  
Dyar, B. A. \_\_\_\_\_ De Smet  
Feige, C. A. \_\_\_\_\_ Iroquois  
Grove, E. H. \_\_\_\_\_ Arlington

Hopkins, N. K. \_\_\_\_\_ Arlington  
Irvine, G. B. \_\_\_\_\_ Lake City, Minn.  
Jamieson, G. V. \_\_\_\_\_ De Smet  
Rae, H. B. \_\_\_\_\_ Lake Preston  
Scanlon, D. L. \_\_\_\_\_ Volga  
Stockdale, C. P. \_\_\_\_\_ Ethan

## WHETSTONE VALLEY DISTRICT MEDICAL SOCIETY—NO. 12

PRESIDENT  
Flett, Chas. \_\_\_\_\_ Milbank  
SECRETARY  
Brown, A. E. \_\_\_\_\_ Webster

Church, E. O. \_\_\_\_\_ Big Stone City  
DeTuncy, A. E. \_\_\_\_\_ Milbank  
Flett, Chas. \_\_\_\_\_ Milbank  
Harris, H. G. \_\_\_\_\_ Wilmot  
Hawkins, A. P. \_\_\_\_\_ Waubay

Hayes, C. E. \_\_\_\_\_ New York  
Jenkins, P. B. \_\_\_\_\_ Waubay  
Lowthain, G. W. \_\_\_\_\_ Milbank  
Peabody, H. C. \_\_\_\_\_ Webster  
Peabody, P. D. \_\_\_\_\_ Webster  
Severide, A. L. \_\_\_\_\_ Webster

## MINER DISTRICT MEDICAL SOCIETY—NO. 13

PRESIDENT  
Hauge, L. J. \_\_\_\_\_ Howard  
SECRETARY  
Barthel, J. F. \_\_\_\_\_ Howard  
Amsberry, A. L. \_\_\_\_\_ Carthage

Barthell, J. F. \_\_\_\_\_ Howard  
Burman, G. E. \_\_\_\_\_ Carthage  
Hauge, L. J. \_\_\_\_\_ Howard  
Lierle, G. A. \_\_\_\_\_ Canova  
Loring, F. M. \_\_\_\_\_ Artesian

Miller, J. L. \_\_\_\_\_ Spencer  
Noble, A. G. \_\_\_\_\_ McMinnville, Ore.  
Noble, H. B. \_\_\_\_\_ Howard  
O'Donnell, H. J. \_\_\_\_\_ Canova  
Willoughby, F. C. \_\_\_\_\_ Howard

## ALPHABETICAL ROSTER

Adams, B. A. \_\_\_\_\_ Bristol  
Adams, G. S. \_\_\_\_\_ Yankton  
Adams, J. F. \_\_\_\_\_ Aberdeen  
Ahern, J. J. \_\_\_\_\_ Oldham  
Aldrich, H. H. \_\_\_\_\_ Hitchcock  
Allen, A. G. \_\_\_\_\_ Hot Springs  
Allen, J. M. \_\_\_\_\_ Rosholt  
Alway, J. D. \_\_\_\_\_ Aberdeen  
Alway, R. D. \_\_\_\_\_ Aberdeen  
Amesberry, A. L. \_\_\_\_\_ Carthage  
Auld, C. V. \_\_\_\_\_ Plankington  
Baer, T. H. \_\_\_\_\_ Timberlake  
Ball, W. R. \_\_\_\_\_ Mitchell  
Barker, J. A. \_\_\_\_\_ Hot Springs  
Barthell, J. F. \_\_\_\_\_ Howard  
Bartron, H. J. \_\_\_\_\_ Watertown  
Bates, J. S. \_\_\_\_\_ Clear Lake  
Bates, W. A. \_\_\_\_\_ Aberdeen  
Baughman, D. S. \_\_\_\_\_ Madison  
Beall, L. F. \_\_\_\_\_ Irene  
Bentley, W. S. \_\_\_\_\_ Sioux Falls  
Berry, S. G. \_\_\_\_\_ Tyndall  
Beukelman, W. H. \_\_\_\_\_ Sticknev  
Bigler, Lottie G. \_\_\_\_\_ Yankton  
Billion, T. J. \_\_\_\_\_ Sioux Falls  
Billingsley, P. R. \_\_\_\_\_ Sioux Falls  
Blezek, F. M. \_\_\_\_\_ Tabor  
Bliss, P. D. \_\_\_\_\_ Colton  
Bobb, B. A. \_\_\_\_\_ Mitchell  
Bostrom, A. E. \_\_\_\_\_ De Smet  
Boutelle, L. E., \_\_\_\_\_ Rochester, Minn.  
Bouza, F. E. \_\_\_\_\_ White River  
Braddock, W. H., Jarbidge, Nev.  
Brandon, P. E. \_\_\_\_\_ Sioux Falls  
Brenckle, J. F. \_\_\_\_\_ Northville  
Brimmer, K. W. \_\_\_\_\_ Volga  
Brookman, L. J. \_\_\_\_\_ Vermilion  
Brown, A. E. \_\_\_\_\_ Webster  
Bruner, J. E. \_\_\_\_\_ Frederick  
Bryant, F. A. \_\_\_\_\_ Herrick  
Buchanan, R. A. \_\_\_\_\_ Wessington  
Burkland, P. R. \_\_\_\_\_ Vermilion  
Burman, G. E. \_\_\_\_\_ Carthage  
Bushnell, Wm. F. \_\_\_\_\_ Elk Point  
Rutler, C. A. \_\_\_\_\_ Lake Preston  
Calene, J. L. \_\_\_\_\_ Aberdeen  
Campbell, R. F. \_\_\_\_\_ Watertown

Carmack, A. O. \_\_\_\_\_ Colome  
Case, T. J. \_\_\_\_\_ Delmont  
Chapman, W. S. \_\_\_\_\_ Redfield  
Chassell, J. L. \_\_\_\_\_ Bellefourche  
Church, E. O. \_\_\_\_\_ Big Stone City  
Clough, F. E. \_\_\_\_\_ Lead  
Cogswell, M. E. \_\_\_\_\_ Wolsey  
Cook, J. F. D. \_\_\_\_\_ Langford  
Cooley, F. H. \_\_\_\_\_ Redfield  
Cottam, G. G. \_\_\_\_\_ Sioux Falls  
Countryman, G. E. \_\_\_\_\_ Aberdeen  
Craig, D. W. \_\_\_\_\_ Sioux Falls  
Crain, C. F. \_\_\_\_\_ Redfield  
Crain, F. M. \_\_\_\_\_ Redfield  
Crane, H. L. \_\_\_\_\_ Lead  
Crandell, W. G. \_\_\_\_\_ Watertown  
Crawford, J. H. \_\_\_\_\_ Watertown  
Crawford, R. A. \_\_\_\_\_ Chamberlain  
Creamer, F. H. \_\_\_\_\_ Dupree  
Crecelius, H. A. \_\_\_\_\_ Volin  
Cruikshank, T. \_\_\_\_\_ Vermilion  
Culver, C. F. \_\_\_\_\_ Sioux Falls  
Curtis, J. E. \_\_\_\_\_ Lemmon  
De Vall, F. C. \_\_\_\_\_ Garretton  
Deertz, J. J. \_\_\_\_\_ Brentford  
Delaney, W. A. \_\_\_\_\_ Mitchell  
DeTuncy, A. E. \_\_\_\_\_ Milbank  
Dick, L. C. \_\_\_\_\_ Spencer  
Dickey, J. B. \_\_\_\_\_ Iroquois  
Dickinson, W. E. \_\_\_\_\_ Canistota  
Dinsmore, W. E. \_\_\_\_\_ Claremont  
Doering, R. E. \_\_\_\_\_ Tripp  
Donahoe, S. A. \_\_\_\_\_ Sioux Falls  
Donahoe, W. E. \_\_\_\_\_ Sioux Falls  
Duguid, J. O. \_\_\_\_\_ Springfield  
Dunn, J. E. \_\_\_\_\_ Groton  
Dyar, B. A. \_\_\_\_\_ De Smet  
Eagan, J. B. \_\_\_\_\_ Dell Rapids  
Egan, M. H. \_\_\_\_\_ Sioux Falls  
Elward, L. R. \_\_\_\_\_ Ashton  
Engelson, C. J. \_\_\_\_\_ Brookings  
Erickson, O. C. \_\_\_\_\_ Sioux City  
Ewald, P. P. \_\_\_\_\_ Lead  
Farnsworth, C. P., Chamberlain  
Farrell, W. D. \_\_\_\_\_ Aberdeen  
Fasser, A. O. \_\_\_\_\_ Cheyenne, Wyo.

Feige, C. A. \_\_\_\_\_ Iroquois  
Fleeger, R. B. \_\_\_\_\_ Lead  
Flett, Chas. \_\_\_\_\_ Milbank  
Forsberg, C. W. \_\_\_\_\_ Sioux City  
Freeburg, H. M. \_\_\_\_\_ Watertown  
Freshour, I. M. \_\_\_\_\_ Yankton  
Freyberg, F. W. \_\_\_\_\_ Aberdeen  
Frink, R. P. \_\_\_\_\_ Wagner  
Fulford, G. H. \_\_\_\_\_ Sioux Falls  
Gage, A. E. \_\_\_\_\_ Sioux Falls  
Gage, E. E. \_\_\_\_\_ Sioux Falls  
Gage, E. E. \_\_\_\_\_ Sioux Falls  
Gearhart, N. B. \_\_\_\_\_ Huron  
George, W. A. \_\_\_\_\_ Selby  
Gerdes, O. H. \_\_\_\_\_ Eureka  
Geyerman, P. F. \_\_\_\_\_ Deadwood  
Gillis, F. D. \_\_\_\_\_ Mitchell  
Girard, A. G. \_\_\_\_\_ Hoven  
Gregg, J. B. \_\_\_\_\_ Sioux Falls  
Gregory, D. A. \_\_\_\_\_ Miller  
Green, B. T. \_\_\_\_\_ Brookings  
Griffith, W. H. \_\_\_\_\_ Huron  
Grosvenor, L. N. \_\_\_\_\_ Huron  
Grove, A. F. \_\_\_\_\_ Dell Rapids  
Grove, E. H. \_\_\_\_\_ Arlington  
Grove, M. M. \_\_\_\_\_ Dell Rapids  
Hagin, J. C. \_\_\_\_\_ Miller  
Hague, L. J. \_\_\_\_\_ Howard  
Halleck, P. P. \_\_\_\_\_ Letcher  
Hammond, M. J. \_\_\_\_\_ Watertown  
Hanson, O. L. \_\_\_\_\_ Valley Springs  
Hannon, L. J. \_\_\_\_\_ Hartford  
Hargens, C. W. \_\_\_\_\_ Hot Springs  
Harris, H. G. \_\_\_\_\_ Wilmot  
Hart, B. M. \_\_\_\_\_ Onida  
Hart, R. S. \_\_\_\_\_ Groton  
Hawkins, A. P. \_\_\_\_\_ Waubay  
Hayes, Clara E. \_\_\_\_\_ New York  
Heinemann, A. A. \_\_\_\_\_ Wasta  
Hendrickson, Paul, \_\_\_\_\_ Vienna  
Herman, H. J. \_\_\_\_\_ Webster  
Hickman, G. L. \_\_\_\_\_ Bryant  
Hill, L. G. \_\_\_\_\_ Sioux Falls  
Hill Robert \_\_\_\_\_ Ipswich  
Hoagland, C. C. \_\_\_\_\_ Madison  
Hodges, V. R. \_\_\_\_\_ Lead  
Hohf, J. A. \_\_\_\_\_ Yankton



Hohf, S. M. — Yankton  
 Hopkins, N. K. — Arlington  
 Housman, W. McK. — Sioux Falls  
 Howe, F. S. — Deadwood  
 Hummer, H. R. — Canton  
 Hurley, S. E. — Gettysburg  
 Hyden, A. — Alcester  
 Ince, H. J. T. — Rapid City  
 Irvine, G. B. — Lake City, Minn.  
 Isaac, J. P. — Freeman  
 Jackson, A. S. — Lead  
 Jackson, E. B. — Aberdeen  
 Jackson, R. J. — Rapid City  
 Jacobey, W. K. — Mobridge  
 Jamieson, G. V. — De Smet  
 Jenkins, P. B. — Waubay  
 Jernstrom, R. E. — Wall  
 Johnson, A. Einar — Watertown  
 Johnson, G. E. — Avon  
 Johnston, M. C. — Aberdeen  
 Jones, E. W. — Mitchell  
 Jones, R. R. — Britton  
 Jones, T. D. — Bowdle  
 Jordan, L. E. — Chester  
 Joyce, E. — Hurley  
 Kalayjian, D. S. — Parker  
 Katz, O. W. — Seneca  
 Kauffman, E. J. — Marion  
 Keeling, C. M. — Springfield  
 Keller, S. A. — Sioux Falls  
 Keller, W. F. — Sioux Falls  
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 Kelly, R. A. — Mitchell  
 Kenaston, H. R. — Bonesteel  
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 Kidd, F. S. — Woonsocket  
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 Koren, Finn — Watertown  
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 Kutnewsky, J. K. — Redfield  
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 Landmann, G. A. — Scotland  
 Langley, C. S. — Lake Andes  
 Larson, M. W. — Canton  
 Launspach, G. W. — Huron  
 Lavery, C. J. — Aberdeen  
 Leighton, I. W. — Scotland  
 Lewison, E. — Canton  
 Lierle, G. A. — Canova  
 Lister, F. E. — Faith  
 Lloyd, J. H. — Mitchell  
 Lokke, B. R. — Egan  
 Long, A. G. — Sioux Falls  
 Long, Martin — Custer  
 Loring, F. M. — Artesian  
 Lowe, C. E. — Mobridge  
 Lowthian, G. W. — Milbank  
 Lundquist, C. G. — Leola  
 McCarthy, P. V. — Aberdeen  
 McCauley, C. E. — Aberdeen  
 McIntyre, P. S. — Bradley  
 McKie, J. F. — Wessington  
 McLaurin, A. A. — Pierre  
 Mabee, O. J. — Mitchell  
 Magee, W. G. — Watertown  
 Malloy, J. F. — Mitchell  
 Malster, R. M. — Carter  
 Martin, H. B. — Harrold  
 Martin, P. T. — Gary  
 Matousek, W. J. — Dallas  
 Mattox, N. E. — Lead  
 Mayer, R. G. — Aberdeen  
 Maytum, W. J. — Alexandria

Mertens, J. J. — Gettysburg  
 Meyer, H. C. E. — Sioux Falls  
 Michael, L. F., San Diego, Calif.  
 Miller, Frank — Aberdeen  
 Miller, George — Spearfish  
 Miller, H. A. — Brookings  
 Miller, H. — Conde  
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 Minard, R. W. — Midland  
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 Mitchell, Fred L. — Newell  
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 Murdy, Robert C. — Aberdeen  
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 O'Toole, T. F. — New Underwood  
 Olson, C. L. — McIntosh  
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 Payne, R. H. — Tripp  
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 Price, C. R. — Orient  
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 Putnam, F. I., Ellensburg, Wash.  
 Quinn, J. F. — Gregory  
 Quinn, R. J. — Burke  
 Quinn, W. M. — Winner  
 Raber, D. D. — Nemo  
 Radusch, Freda S. — Rapid City  
 Rae, Harold B. — Lake Preston  
 Ramsey, E. T. — Clark  
 Ramsey, Guy — Philip  
 Ranney, T. P. — Aberdeen  
 Reagan, R. — Sioux Falls  
 Remey, C. E. — Chicago  
 Rice, D. B. — Britten  
 Richards, G. H. — Watertown  
 Rider, A. S. — Flandreau  
 Riggs, T. F. — Pierre  
 Robbins, Emma E. — Aberdeen  
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 Rogers, J. S. — Hot Springs  
 Rowe, A. N. — Estelline  
 Salladay, I. R. — White River  
 Sargent, C. E. — Isabel  
 Saxton, W. H. — Huron  
 Saylor, H. L. — Huron

Scallin, P. R. — Clark  
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 Schmidt, I. H. — Faulkton  
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 Seeman, C. A. — Tulare  
 Seeman, H. J. — Rockham  
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 Severide, A. L. — Webster  
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 Young, B. A. — Hot Springs  
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 Youtz, H. L. — Brookings  
 Zachritz, G. F. — Faulkton  
 Zimmerman, Goldie — Sioux Falls

## THE PRESIDENT'S ADDRESS: A REVIEW OF THE ASSOCIATION'S WORK.\*

BY T. F. RIGGS, M.D.

PIERRE, SOUTH DAKOTA

Fellow-Members of the South Dakota Medical Association, Ladies, and Distinguished Guests:

The honor which this Association has conferred upon me I appreciate deeply and reverently. The history of our organization is one of accomplishment, and its future presents opportunities rich in possibilities for good to us and to our fellow-men. It is with this thought in mind that I render to you an accounting of the aims and efforts of the officers of our Association for the year past.

It has been our privilege, either separately or together, to have met with nearly all of the component District Societies at some time during the year. This has been a most stimulating experience, as well as a most pleasurable one, because of the personal contacts afforded and the viewpoints obtained. We wish to thank you for your comradarie, your suggestions, and your hearty co-operation.

In legislature matters the Workmen's Compensation Law was amended to allow a maximum of \$100.00 each for professional services and for hospital charges or for care in case hospitalization was impossible.

The Statute of Limitation of actions against hospital, physician, or dentist was reduced from six years to two years, each of the above changes in the law, but more especially the latter, being worthy legislation.

A bill bringing our vital statistics law into accord with the Federal regulations was carefully prepared in the Attorney-General's office, but on presentation was thoroughly devitalized through amendments, and it died in committee.

The introduction of a Basic Science Law was under consideration when a situation developed which made it seem advisable to postpone this effort until another session.

That the Osteopathic Association proposed to introduce a bill granting their members license to do major surgery was a matter of common knowledge, in fact a bill had been drafted and a hearing held before the joint Committee on Public Health with the object in view of having it introduced as a committee bill. At a confer-

ence later with the representatives of the osteopaths they professed a willingness to raise their standard of requirements to a par with ours, and a proposed revision of the State Board of Health Bill was worked out along this line, not reducing the requirements of the medical man, but at every point raising the requirements of the osteopaths until a composite board of examiners was the logical outcome, the better to determine the qualifications of those candidates applying for license as osteopathic physicians. During our conference over the proposed bill, it developed that the Dental Association desired a place on the Board of Health, a most sensible and worthy addition, with the result that the bill submitted called for a State Board of Health composed of six members, one each from the homeopathic, the osteopathic and the dental schools of practice, the other three being from the regular school of medicine, the dentist member of the board having no power or duty to act on this board of examiners in licensing applicants to practice the healing art. Vacancies on the board were to be filled by the Governor's appointment from nominations received from the governing body of that organization lacking proper representation.

The bill thus drawn met with the approval of your Legislative Committee and also in nearly all respects with that of your Board of Councilors to whom it was referred before being introduced as a joint committee bill. It passed the House and Senate and was vetoed by the Governor, passed the House over the veto, but was killed in the Senate. So far as I am aware, officially or otherwise, the bill has been dead since that time, as witness my telegraphic correspondence of March 7 with Dr. Wm. C. Woodward, of Chicago. That a similar bill may be introduced at some future time is probable, and, if introduced, we of the medical profession should prepare ourselves to guide such legislation.

As to other matters for our future consideration; there are several,—not all are mine, but I am willing to accept responsibility for any not meeting your approval.

The most important is the Basic Science Law, above mentioned, which requires that all practitioners of the healing art, whatsoever their

\*Presented before the Forty-sixth Annual Meeting of the South Dakota State Medical Association, May 3-6, 1927.



'pathy,' shall prove their education in the fundamentals before being allowed examination upon their professional qualifications. This merits your attention.

There is also the Sheppard-Towner Law, which, while it has worked out well in our state, thanks to the manner in which it was managed by Dr. Clara Hayes, yet is open to criticism as tending toward State Medicine, and as subsidizing us through a form of charity when we are entirely able to meet our own obligations. However, possibly we need not concern ourselves with this bill because at the last session of Congress it was extended for only two years, being definitely outlawed after July 1, 1929.

There are also, as you know, several charitable or semicharitable organizations working in our state. Their aims are high and their purpose laudable, but through lack of clear distinction and proper co-operation their fields overlap, much of their effort is wasted, and they frequently injure one another. Their efforts should be co-ordinated, and as the aim of each is to benefit the general public health, it would be helpful to their purpose to have the assistance of the medical profession in at least an advisory capacity.

The next suggestion will probably seem more utopian than the foregoing; perhaps you will think it impossible and doubtless many of you will feel it impolitic, namely, that the State Board of Health be taken out of politics. This has been done in Alabama, it is claimed, with most satisfactory results and few regrets. There are arguments on both sides, but the fact remains that political patronage rarely benefits the health of a people. Whatever the solution, I believe the Superintendent of the State Board of Health should not only be a graduate in medicine, but also he should be a graduate from a school of public health.

Leadership in the field of public health is expected of us because of our profession and our training, and we must not fail to meet our obligation. The science of medicine is undergoing marked evolutionary changes, one of the most significant being the increasing interest of the public in the facts concerning health and disease. It may be that physicians should not advertise themselves, but we are remiss if we do not keep before the public the aims of our profession.

For our own Association there is a suggestion. Under our present organization all business and matters of policy are discussed by a group of representatives—a Senate and a House, so to speak—who report their actions and recommendations to the Association as a whole, and this is as it should be, but might it not be well to set apart a definite period in the program as an open business meeting where the individuals of our Association could become more conversant with the business details and problems than is possible under our present method?

There is another matter in a way less professional, but in no way less worthy. Every busy man should have his hobby, the physician especially, and most of us have. Many of us belong to the Isaac Walton League and believe in what it is trying to do; but are we *all* members and as active as we should be? As physicians we must be in hearty accord with the League's efforts against water pollution and also with the conservation campaign.

Most of us here easily recall the time when the lesser wild game was plentiful; some of us can remember the days when antelope and deer were frequently seen and there are a few members of our Association whose fathers found in the wild game of this land a source of food and a means of protection. We all know the present situation, and, if we desire a heritage for those who come after us, we cannot but be stimulated by the words of the late Emerson Hough in his prayer to the "Spirit of the Great Angler" when he said: "Help us work the great miracle of giving the ages a part of the America that was ours."

I trust it is pardonable for a retiring President to submit suggestions for future efforts since he realizes how little has been accomplished relatively during his year of office. Whatever the value of the foregoing suggestions, I know of nothing which may be more helpful to us as individual physicians, and as members of this, our Association, than the thoughts expressed by Henry Van Dyke: "The only way to live really is to work, and the only way to work happily and effectively is to lay aside selfishness and squabbling, petty jealousies and rivalries, and concentrate our fraternal wills on the job in hand."

## HYPERTROPHIC PYLORIC STENOSIS

BY CHESTER A. STEWART, M.D.,

AND

ERLING S. PLATOU, M.D.

Department of Pediatrics, University of Minnesota

MINNEAPOLIS, MINNESOTA

Hypertrophic pyloric stenosis is seen during the first few weeks of life in an appreciable number of infants and presents a fairly characteristic array of symptoms. These symptoms in general include projectile vomiting which often appears rather suddenly, is very persistent, and results in a progressive rapid loss in weight. Inspection of the epigastrium usually reveals distinct peristaltic waves and under anesthesia, particularly, the pyloric tumor may be palpated. The  $x$ -ray is of value in determining the degree of obstruction present at the pyloric end of the stomach and also reveals the extent of gastric dilatation which is usually pronounced in well-developed cases of pyloric stenosis. Anatomic and histologic studies of the pylorus of infants having this condition have revealed a marked hypertrophy of the circular muscle fibers of the pyloric ring. Sauer (1924) constructed wax models of the muscularis of the pylorus from two male infants of approximately the same age and weight, one being from a normal child and the other from a typical case of stenosis of the pylorus. The wax model of the normal muscularis weighed 3,000 grams, whereas that from the case having a stenosis weighed 6,050 grams, which demonstrated conclusively that a marked hypertrophy of the muscle exists in hypertrophic pyloric stenosis. The stages of healing which occur following operation upon the hypertrophic pylorus have been studied by Wollstein (1922) in a group of twenty-five infants who died after various intervals of from four weeks to two years subsequent to the time of operation. This study revealed that in four days following operation the base of the gap between the incised edges of the wound was filled by a fibrin plug with connective tissue beginning to cover the cut ends of the muscle. Nine to ten days post-operative the gap in the wound was still wide, but the entire length of the incision was covered with a delicate layer of cellular connective tissue. At this time the musculature of the pylorus feels much softer than it did at the time of operation. Apparently, with a cessation of the overstimulation of the contracting power of this muscle a gradual relaxation occurs. Twenty-five days after operation only a narrow scar is found at

the site of the wound, and at this time the dilatation of the stomach has disappeared and the pylorus feels entirely normal. After this period the scar tissue which filled in the gap between the incised ends of the muscle contract and re-approximates the cut ends of the circular muscle fibers, thus at the stage of complete healing the original incision through the pyloric musculature is represented by a thin linear scar. For some apparently unknown reason the hypertrophy of the pyloric muscle, such as existed previous to the operation, does not recur when healing is completed. During the past year the writers have had eight infants operated on for this condition with no deaths. Previous to the operation medical therapy was instituted for a short period, which included the administration of atrophin sulphate in increasing doses until a physiological reaction was obtained. In addition a high caloric food of thick cereal cooked in breast milk with 5 per cent sugar added to the preparation was supplied. When it became evident that medical procedure would not suffice to overcome the pyloric obstruction surgical intervention was resorted to with most satisfactory results. The majority of these infants were operated on under local anesthesia combined with the administration of 15 to 20 grains of chloral hydrate per rectum immediately previous to operation. The pre-operative preparation included the administration of normal-salt solution by hypodermoclysis. In each instance from 300 to 400 c.cm. of salt solution were administered subcutaneously at one time rather than resorting to repeated smaller subcutaneous injections. In all of these cases the decision to operate was made as promptly as possible and when it was certain that medical therapy would not overcome the condition. The babies, therefore, were in fairly good condition at the time operation was decided upon. We believe it advisable to operate on these cases before a great deal of weight loss has occurred and before the babies have been reduced to a condition where they are a poor surgical risk. The results obtained in our small series apparently justified this opinion.

Another child, not included in the group above, was operated on with a pre-operative



diagnosis of pyloric obstruction and presented many of the features of pyloric stenosis except that sufficient food passed through the stomach to permit the child to gain very slowly. Operation was performed at the age of six months. Previous to this time the child had vomiting attacks daily, often projectile in character and x-ray studies revealed a marked delay in the emptying time of the stomach, due apparently to an obstruction at the pylorus. At operation the pyloric musculature was found to be normal, but the interesting pathological condition found was the presence of congenital transduodenal bands, which caused a partial occlusion with kinking of the duodenum. These bands were dissected from the duodenum, and constriction was relieved in this manner. This procedure relieved the child of his symptoms, and he made an uneventful recovery.

## SUMMARY

1. In hypertrophic pyloric stenosis the musculature of the pylorus may be increased to twice the size of that found in the pylorus of the normal child.

2. Stages by which healing occurs following operation in these conditions is briefly described.

3. In a series of eight cases of hypertrophic pyloric stenosis operated on during the past year, no deaths occurred. Several of these cases were operated on under local anesthesia, and in a few cases chloral hydrate was also given per rectum.

4. One case was reported which simulated hypertrophic pyloric stenosis, but at operation the pyloric obstruction was found to be due to transduodenal bands constricting the upper portion of the pylorus. This child made an uneventful recovery.

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Wollstein, M.: Healing of hypertrophic pyloric stenosis after the Fredet-Rammstedt operation. *Am. Jour. Dis. Child.*, 23-511, June, 1922.

## BOOK NOTICES

THE PRACTICE OF MEDICINE. By A. A. Stevens, M.D., Professor of Applied Therapeutics in the University of Pennsylvania. Second edition; entirely reset. Octavo of 1,174 pages. Philadelphia and London: W. B. Saunders Company. 1926. Cloth, \$7.50 net.

This is a very careful work covering practically all internal diseases. In addition it has chapters on "Poisoning," "Disorders of Metabolism," "Diseases of the Blood-Forming Organs and the Ductless

Glands." Especial attention is given to diagnosis and treatment. It is very valuable as a text-book for students and as a reference book for practicing physicians. The author is to be complimented on the clear, forceful manner of presenting his subjects and the careful detail given to symptoms, diagnosis, and treatment. It is a book well worth perusing and is a valuable addition to any medical library.

—W. W. MOIR, M.D.

A PRIMER FOR DIABETIC PATIENTS. A Brief Outline of the Treatment of Diabetes with Diet and Insulin, Including Directions and Charts for the Use of Physicians in Planning Diet Prescriptions. By Russell M. Wilder, M.D., Section on Nutrition, Division of Medicine, Mayo Clinic. Third edition, reset. 12mo of 134 pages. Philadelphia and London: W. B. Saunders Company, 1927. Cloth, \$1.50 net.

This is a clear, concise résumé of the treatment of diabetics. It gives the methods of calculating caloric values and the total daily quantities for individual patients.

It is written in a very simple style, comprehensible to the patient as well as to the physician. Every doctor who treats diabetics occasionally should have this little book in his library.

—W. W. MOIR, M.D.

AN INTERMEDIATE TEXT-BOOK OF PHYSIOLOGICAL CHEMISTRY WITH EXPERIMENTS. By C. J. V. Pettibone, Ph.D., Associate Professor of Physiological Chemistry; Medical School University of Minnesota, Minneapolis. Third edition. St. Louis: C. V. Mosby Company, 1925.

Among the recent books received by the Hennepin County Medical Library is a volume of four hundred pages by C. J. V. Pettibone of the University of Minnesota. The volume is entitled "An Intermediate Text-Book of Physiological Chemistry" and it is published by the Mosby Company of St. Louis. The first part of the book is devoted to a discussion of the "Material Bases of the Body" which materials the author has divided into five groups, viz.:

- I The inorganic materials, including water.
- II Carbohydrates.
- III Fats, phosphatids, and related compounds.
- IV Proteins.
- V Extractives.

The metabolism of these groups is then treated in a concise manner without unnecessary discussion of unproven theories.

The latter part of the book consists of an outline of the procedure in the analysis of blood, urine, gastric juices, etc.

The rapid strides that have been made in physiological and synthetic chemistry as related to medicine, within very recent years, have found the medical graduate of fifteen or twenty years "en passant." To those of the older fen who wish to brush up their knowledge, and to the students who are on their way to more detailed knowledge, this intermediate text-book of chemistry should be a valuable aid.

—G. E. THOMAS, M.D.

# THE JOURNAL-LANCET

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AUGUST 1, 1927

## GYMNOSOPHY

A "gymnosophist" is described by Webster as one of a sect of philosophers said to be found in India by Alexander the Great; they went naked, ate no flesh, and devoted themselves to meditation. *The American Mercury* for August, 1927, in its Clinical Notes, written by George Jean Nathan, goes into the subject more deeply. He advises, under the title of this editorial, "the latest cure for all human ills, whether of mind or body—the climax to osteopathy, chiropractic, physicultopathy, Kneippism, Fletcherism, deep-breathing, vegetarianism, antivaccination, Schlatterism, Christian Science, psychoanalysis, prohibition, Fabianism, Kaffee-Hag and denicotinized cigarettes—bears the label *Nachtkultur* or, in its English and American incarnation, gymnosophy." The idea seems to be that the human race's principal trouble is that it wears clothes, and this new abstract method of healing "advocates, in brief, as an alleviation of all mortal distress, the practice of nudity of both sexes in common, for hygienic, social and esthetic reasons." In Germany and many other places in Europe, and perhaps in America, too, it has already gained favor, particularly in those places where "the police are diverted and kept busy by Wedekind plays and French spies," and in England and America, there are at least a half

dozen groups currently engaged in the devotion to it.

Of course, in some countries this state of nudity is of no special consequence, for the inhabitants are accustomed to going around as nature intended them to do. It would hardly do for Minnesota in midwinter; this practice could not be carried out very well owing to the intense cold,—neither would the Eskimos adopt it as a pastime.

"In a pamphlet announcing the bible of the new order, the work of Maurice Parmelee, Ph.D., member of the Institut International de Sociologie, fellow of the American Association for the Advancement of Science and member of the American Anthropological Association, the battle-cry is thus sounded: 'Mankind has become largely cut off from nature, and life is too artificial, much to the detriment of health and happiness. Thus man can little know and understand himself, his fellows and his natural environment, and this ignorance causes much of the stress and strain of human existence. This situation is strikingly exemplified in the concealment of the body, which hampers the rearing of the young and gives rise to unhealthy mental complexes. The new gymnosophy endeavors to regain what mankind has lost through civilization, without rejecting anything of human, social and cultural value. Nudity aids materially in bringing mankind closer to nature and in promoting more genuine and sincere relations between the sexes.'"

Nathan's article goes on to say, "One shudders to think what the world will be like when Dr. Parmelee's great undressing plan is universally adopted, as, of course, it is bound to be. On the therapeutic and cultural advantages of the idea I hesitate to expatiate, but its more immediate results cause me some concern. As a professional student and critic of the arts, I rise to ask if it will be required of me that I contemplate Cal Coolidge, Will Borah, and Bishop Manning in the altogether. If so, I state that I shall demand a passport for Liberia instantler. As an American citizen I am perfectly willing to be compelled to pay taxes, spend time serving on juries to free guilty bootleggers, write the necessary number of letters in behalf of the MM. Sacco and Vanzetti, and make my own gin; but this other I decline to do. In order to keep out of jail, I'll compromise on Aimée McPherson, but I draw the line somewhere. The day I have to look at Charlie Schwab and Otto Kahn in their birthday clothes, on that day I enlist in the Japanese secret service."



This is one of Nathan's efforts, and a successful one, at being funny, and yet there is more than a grain of truth in what he says; that there are people willing, cheerfully so, to consult any sort of a process of healing. Most of these people, of course, are morons. They are feeble-minded, and they take up with the last suggestions they hear; that is, it is quite evident that they are defective in their brain construction and equally defective in their mental processes. Yet they can arouse a good deal of enthusiasm among a certain class of people. It is a curious thing to note that sometimes some of the so-called *intelligensia* join these faddists. Most medical men have had experience with these faddists. The family of the sick person does not recognize the seriousness of the condition, with the result that they call in a doctor only when they can see for themselves that the patient is going to die; and they probably realize, although possibly they are too feeble-minded to know, that their only possible hope of avoiding a coroner's inquest lies in calling a doctor. And when he arrives and sees death spreading over the patient, he promptly tells them the patient is going to die. But the family and the sympathizers of the cultist do not take it so seriously. They not infrequently blame the doctor for not saving the patient's life even though he is called only when it is already almost extinct. We are sure this statement could be verified hundreds of times if physicians would disclose the tragedies in families under these fool cultists.

#### THE MINNESOTA NEUROLOGICAL SOCIETY

The last meeting of this society took place at Rochester on the eleventh of June, and the program was prepared by the Neurological Staff of the Mayo Clinic although every neurologist at the meeting contributed his quota, one way or another, to the program and the entertainment. The entire program was carried out at St. Mary's Hospital, in two of the large operating-rooms.

The first surgical clinic was given by Dr. A. W. Adson and his associate, Dr. W. McK. Craig, the chief operation being "Dissection of the Root of the Glossopharyngeal Nerve," which meant opening of the occipital bone, elevating the cerebellum, and then hunting for and sectioning of the ninth nerve. Such dissections are very difficult and require a good deal of time and, necessarily, a great deal of experience. The surgeon now goes into the head with more confidence

and ease, not speed than he did formerly because he knows his anatomy better and because he knows it is well to find the root of the nerve or the immediate section of diseased tissue in order to get results.

Then, too, Dr. Adson gave a very interesting talk on "Cervical Ribs," and through lantern slides he illustrated a new method of approach. His slides also showed the probabilities of an occlusion or constriction of the subclavian artery, which might be relieved by incision higher up and in front of the usual place of attack. He cuts the scalenous muscle or detaches it from its bony point, and in this way he finds he has relieved the subclavian much more scientifically than if he attempts to resect the cervical rib.

Dr. F. P. Moersch gave a very interesting talk on brain tumors and syphilis, and he made the statement, which has been under discussion of late, that not infrequently in all kinds of brain tumors does one find a Wassermann reaction in the blood and in the spinal fluid, or in both. This occurs a surprising number of times, and it opened up a subject for wide speculation. The essayist even showed by illustrated cases that many of the patients were treated for brain syphilis who, in the end, died, and the autopsy revealed brain tumors of an entirely different nature. In none of his brain tumor cases where a Wassermann was found did they find evidence of tumor complicated by syphilis unless it was indicated by other physical signs. In spite of this unusual and unexpected combination of the Wassermann with brain-tumor cases other than gummas, this may lead to a good deal of discussion as to its accuracy. But if all these people were made the subject of an autopsy there can be no reasonable doubt. Hence arose the difficulty of differentiating between brain tumors of many types and syphilis of the brain; and in the discussion which was carried on by Dr. W. I. Lillie, he believed that a differentiation could be made by the eye-ground findings. He pointed out with great clearness the restricted field of vision which enabled one to differentiate between tumor and syphilis.

One of the unusual papers of the program was given by Dr. J. J. Shugrue on "Nystagmus of the Soft Palate," a rather unusual condition and not infrequently found in diseases of the brain, such as growths in the cerebellum or multiple neuritis. So far the writer has been unable to find much literature on the subject and consequently will not comment on the statements made by the essayist.

Dr. H. L. Parker presented a number of cases

of "Involvement of the Fifth Nerve in Acoustic Tumors," a very remarkable number of illustrations of the frequent inability to recognize an acoustic tumor associated with the fifth nerve.

A very interesting paper was presented by Dr. L. H. Ziegler on "Lipodystrophies," and he showed a number of illustrations on the screen of these unfortunate victims who have dystrophies of muscles in unusual places, for instance, in the trunk or upper chest, the face, or sometimes in the lower extremities without involving the entire body. He found, of course, the majority of them were chronic progressive muscular wasting, and all of them showed a typical chronicity, which eventually ended in death, no remedy having so far been found to relieve their peculiar ailments. It is quite probable that many cases are undiagnosed, or diagnosed in the old-time nomenclature as cases of marasmus.

The program was necessarily quite long, from 8:00 A. M. to 1:00 P. M., and was followed by a luncheon at the Rochester Country Club, which was a delightful affair where many of the men gathered for a little relaxation. During the luncheon hour Dr. Monrad-Krohn, of Oslo, Norway, gave a very enlightening talk on "Myasthenia Gravis," and recorded some of the wonderful improvements that had been made in the treatment of this disease, which is usually progressively fatal. His idea was to prevent any more movement of the muscles of deglutition than was necessary, and to this end he instructed his nurses to feed these people with such foods as could be readily swallowed and to feed them at intervals, so that not less than two to five minutes should elapse between teaspoon feedings. He thought the result proved the worth of his idea in that they learned to eat very carefully and slowly without exhausting the muscles of deglutition, and he had had several remarkable recoveries.

#### A CORRECTION

By an error of the types the paper on "Extrapleural Thoracoplasty for Tuberculosis," in our issue of July 15 (page 328), was credited to Dr. R. C. Murdy, of Aberdeen, S. D. It was written by Dr. B. C. Murdy, of Aberdeen.—THE EDITOR.

#### MISCELLANY

##### DR. RICHARD RODERICK JONES AN APPRECIATION

South Dakota has lost one of its pioneer physicians in the death of Dr. Richard R. Jones, which

occurred at his residence in Britton, S. D., at 4:35 P. M., Sunday, June 26, 1927, at the age of 65 years, 9 months, 7 days.

It has been the writer's privilege to know Dr. Jones for the past twenty-nine years, and as neighboring physicians we were frequently thrown together in consultation. He was the first consultant I ever called for help in an emergency, when starting my work at Langford, and the manner in which he put himself out to help the new doctor in his community was truly ethical, giving full co-operation, showing himself to be a man of sterling qualities, ever treating his fellow practitioners on the square.

He truly loved his work and was ever ready and willing, through all kinds of roads and weather, to go to the assistance of those needing his services; and before the days of the automobile and good roads these trips required hours to make, often over the trackless prairies, requiring physical strength almost superhuman. The exposure incident to such pioneering in medicine showed its mark in his last illness.

He was calm, courageous, and quiet in manner, always a gentleman, respected by the profession. He was honored, loved, and respected by the community where he had labored for thirty-nine years.

J. F. D. COOK, M.D.

Secretary South Dakota State Medical Ass'n.

#### NEWS ITEMS

Dr. L. C. Combacker has moved from Stillwater to Fergus Falls.

Dr. E. J. Hagen has moved from Williston, N. D., to Mahtomedi, Minn.

Dr. H. A. Owenson has moved from Grace City, N. D., to Zelzah, Calif.

Dr. W. H. Braddock has moved from Yankton, S. D., to Jarbidge, Nevada.

Dr. I. L. Harshbarger, of the Mayo Clinic, was married last month to Miss Gertrude Ackerman, of Mankato.

Dr. C. E. McJilton, a 1926 graduate of the Medical School of the U. of M., has located in River Falls, Wis.

The Southeastern Montana Medical Association will hold its next annual meeting next month in Miles City.

Dr. W. D. Sheldon, of the Mayo Clinic, accompanied by his wife, has gone to Europe to spend a couple of months.

Dr. Emma E. Robbins, School Physician of the State Teachers College at Aberdeen, S. D., has moved to Lincoln, Neb.

The North Dakota Tuberculosis Sanatorium charges patients, able to pay it, \$9.00 a week for board in the sanatorium.



Dr. C. L. Olson, of McIntosh, S. D., has sold his practice to Dr. Rush Hester, a recent graduate of the Louisville Medical School.

Dr. G. C. Anderson, who has been doing special work at the Mayo Clinic, has gone to New Orleans, La., to practice neurological surgery.

A hospital building for crippled children is to be built at once for the Medical School of the University of Minnesota. Work on the same will begin in September.

Dr. Milton Kerlan, of Moose Lake, was married last month to Miss Edna P. Mount, of Aitken. Dr. Kerlan is a 1926 graduate of the Medical School of the U. of M.

Dr. J. R. Aurelius, who has been a Fellow in Radiology at the Mayo Clinic for the last two years, has moved to St. Paul, where he will be associated with the Earl Clinic.

Minneapolis physicians are reading, morning and evening, of one or two new medical office buildings soon to be erected in the city at a cost of one or two million dollars each.

*The Pennant*, published by the North Dakota Tuberculosis Association, speaks highly of the work being done by Dr. J. G. Lamont, the Superintendent of that State's Tuberculosis Sanatorium at San Haven.

The new Deaconess Hospital at Billings, Mont., was formally opened on July 3 and was visited by a large number of people. It is an exceedingly attractive home for the sick. The building and equipment cost \$250,000.

The summer meeting of the Park Region District Medical Society met at the County Sanatorium on Otter Tail Lake on July 13. Papers were presented by Dr. J. A. Freeborn, of Little Falls, and Dr. W. E. Wray, of Campbell.

Dr. S. F. Seeley, a recent graduate of the School of Medicine of the U. of M., was married last month to Miss Margaret Sweet, of Minneapolis. Dr. Seeley has joined the U. S. Medical Reserve and will be stationed at San Antonio, Texas.

Dr. H. E. Chamberlain, who succeeds Dr. Smiley Blanton as head of the Minneapolis Child Guidance Clinic (public school work), has taken up his work. Dr. Chamberlain comes to Minneapolis from the Bloomingdale Hospital of New York City.

Dr. James Grassick, President of the North Dakota Tuberculosis Association, announces that "follow-up work" will characterize the policy of the Association's methods this year. Probably no similar association in the country is doing better work than this one.

Dr. Gerald R. Moloney, of Belle Plaine, died last month at the age of 58. His death was caused by an automobile accident. Dr. Moloney was a graduate of the New York University Medical College, class of '75, and had practiced in Belle Plaine over fifty years.

Dr. Ernest V. Gustuson, of Fargo, N. D., died last month at the age of 48. Dr. Gustuson was a graduate of the Chicago College of Medicine and Surgery, class of '09. He located in North Dakota in 1909, practicing at Osnabrock and Milton before locating in Fargo.

Dr. James B. Lewis, of South St. Paul, died on July 24, at the age of 72. Dr. Lewis graduated at the University of Pennsylvania Medical School in the class of '78, and began practice in St. Paul in 1911. He had practiced in Waseca and St. James before going to South St. Paul.

The Montana Association of Railway Surgeons was organized at Missoula, Mont., last month, and the following were elected officers of the Association: President, Dr. S. A. Cooney, Helena; vice-president, Dr. R. C. Monohan, Butte; secretary-treasurer, Dr. E. G. Balsam, Billings.

The group of counties in Southeastern Minnesota that have under consideration the building of a joint tuberculosis sanatorium are making decided progress, and the institution, of some size, will be built. Seven counties have endorsed the plan, and others have it under consideration.

Dr. F. A. Brewster, of Holdrege, Neb., has just completed a 15-bed hospital building at that place. Dr. Brewster built the first hospital in Furnas County, where he located in 1901, and owned the first automobile and the first airplane in that county, and all in a period of a quarter of a century.

On May 27, the Red River Valley Medical Society held its spring meeting at Crookston, to which Dr. W. F. Braasch, of the Mayo Clinic, and Dr. F. W. Wittich, of Minneapolis, were invited as out-of-town guests. Dr. Braasch presented a paper on Nephrolithiasis, and Dr. Wittich conducted a clinic at Sunnyrest Sanatorium. At the banquet meeting in the evening, Doctors Braasch and Wittich were elected honorary members of the Society.

Dr. Victor H. Stickney, of Dickinson, N. D., died on July 26, at the age of 72. Dr. Stickney was a pioneer of that state. He graduated at Dartmouth Medical School in the class of '83 and at once located in North Dakota, at Dickinson, then the end of the N. P. Railway. His

territory covered hundreds of miles, and his calls not infrequently gave him a horse-back ride of 100 miles. He took postgraduate work in Philadelphia in surgery, and was always active in medical matters. He was president of the State Medical Association in 1916. He was always prominent in both civic and medical matters in the state, and was always "every inch a man."

#### Aberdeen (S. D.) District Medical Society

The regular meeting of the Aberdeen District Medical Society was held at the Aberdeen Chamber of Commerce on Tuesday evening, July 19. The following program was presented:

"Recent Advances in Neurology and Psychiatry," by Dr. Arthur S. Hamilton, Minneapolis, Minn.

"Future Clinical Observations on Bowel Obstruction and Its Treatment," by Dr. Donald Macrae, Council Bluffs, Iowa.

"Nephritis from the Standpoint of the General Practitioner," by H. O. Altnow, Minneapolis, Minn.

Dr. C. G. Lundquist, Leola, S. D. was to present a "Report on the Heart Clinic of Dr. Cabot, of Boston," but he was unavoidably detained.

About thirty-five doctors attended the meeting and enjoyed the excellent program presented. Following the meeting lunch was served.

R. G. MAYER, M.D.  
Secretary-Treasurer

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## CLINICAL AND ANATOMICAL EVIDENCE OF ARREST OR CURE IN CERTAIN SELECTED CASES OF DIABETES: A PLEA FOR EARLY RECOGNITION AND TREATMENT\*

By JOSEPH C. OHLMACHER, M.D.

From Department of Pathology, University of South Dakota School of Medicine

VERMILLION, SOUTH DAKOTA

The concerted activity of the medical profession and allied agencies, over the past few years, has resulted in great benefit to the citizens of this country, through the more effective handling of such prevalent diseases as tuberculosis, cancer, and heart disease.

Whether or not diabetes mellitus is on the increase in this country, its great prevalence has become rapidly evident, and this should cause much concern to the medical profession and the general public. Energetic, constant, intelligently pursued, co-operative effort by the medical profession directed against this disease will result in much good. The first requisite is, of course, a medical profession awakened to the needs of the situation. Then the profession, by educating the public and applying to their practice the scientific principles of treatment and prevention, may do much to minimize the ravages of this disease.

It is with this thought in mind that I am pleased to address the members of the South Dakota Medical Association on this occasion. This address was recently presented before the Woodbury County Medical Society, at Sioux City, Iowa, and later before the Yankton District

Medical Society, at Yankton, South Dakota. The apparently favorable reception of the subject before these organizations encourages the belief that it might prove interesting and instructive to a larger group of medical men.

At the risk of appearing presumptuous, a brief review will be given of some of the facts concerning the acquisition of our knowledge of normal and perverted carbohydrate metabolism.

Any carbohydrate, capable of digestion, presented as a food, must first pass through various stages of preparation before it is capable of being utilized by the tissues in the production of energy. The first change is occasioned by the action of a rather weak enzyme, called ptyalin, contained in the saliva. The mixture of saliva with the food starts the breaking down of the complex carbohydrates into simpler substances capable of absorption. This partial digestion is carried on further in the stomach, where it is considerably augmented, up to the point of saturation by the hydrochloric acid of the gastric juice. With the appearance of free hydrochloric acid in the gastric juice, the breaking down of complex carbohydrates ceases. The carbohydrates enter the duodenum as starch, maltose, and glucose. In the duodenum the carbohydrates are further acted upon by the amyllopsin

\*Presented at the Forty-Sixth Annual Meeting of the South Dakota State Medical Association, held at Huron, S. D., May 3-7, 1927.

contained in the external secretion of the pancreas. The remaining starch is hydrolized to maltose. This maltose, together with other disaccharides is now acted upon by an inverting ferment found in the intestine and elsewhere, one of which exists for each type of disaccharide. The maltose is thus broken down into two molecules of glucose. The glucose is now absorbed by the blood of the portal system and first carried to the liver. Here a large part of it is polymerized or condensed to form the more stable glycogen, which is now stored chiefly in the liver and skeletal muscles. The agent responsible for the concentration of the glucose molecules into glycogen is not known. It is possible that it is a reversible ferment. The glycogen is normally held in the tissues as such until needed by the body to produce energy, when, by the action of a ferment called glycogenase, it is reconverted into two molecules of glucose and given up to the blood. Under normal conditions the blood sugar is maintained at a close level, even though an excessive amount of carbohydrates be ingested.

The normal blood-sugar curve varies somewhat between 0.06 and 0.11 per cent. A slight increase over the fasting level is noted after the ingestion of certain foods. Pure dextrose and levulose, taken by mouth, cause a rapid rise in blood sugar, which reaches its maximum, in all cases, at the end of an hour. This is followed by a rapid fall, so that at the end of another hour the normal fasting level is reached. It now seems that the ingestion of pure proteins also brings about a rise in the fasting level. The maximum curve is reached much later, and is not so great. Even pure fats cause a slight rise in blood sugar, which reaches its height at the end of an hour, but which subsides to the fasting level comparatively late. These facts are mentioned as they have an important bearing on the diagnosis and treatment of diabetes.

It is not at present known just how the glucose of the blood is finally taken up and utilized by the tissues in the production of energy, but it is now firmly established that this is largely under the control of a hormone elaborated by the islet tissue of the pancreas. Furthermore, it is known that this hormone represents an internal secretion.

With this brief exposition of normal carbohydrate metabolism I shall now take the liberty of briefly presenting some facts concerning the histology of the pancreas, followed by a brief historical sketch of the development of our

knowledge of normal and perverted carbohydrate metabolism.

The pancreas is divided into definite lobules, separated one from the other by fairly distinct fibrous tissue strands. The lobule consists of acini, or gland-like structures, which are connected with the excretory ducts, into which they empty their secretion, the so-called external secretion of the pancreas. Within the lobules are fairly well-defined, rounded, and possibly encapsulated collections of cells arranged somewhat in definite strands and intimately related to many thin-walled blood vessels. These vessels form intricately twisting loops comparable to the capillaries of the glomerular tufts of the kidneys. These cells are easily recognized, especially with our present methods of staining. They consist, chiefly, of two types, an alpha and a beta type. The alpha cells contain granules that are readily dissolved by water and not by alcohol, so that in alcohol-fixed preparations they become apparent when stained by certain dyes. The beta cells, on the other hand, contain granules which dissolve readily in alcohol and not in water, so that when placed in a fixative containing water, and no alcohol, granules appear, staining somewhat differently than those of the alpha cells. So far as our present knowledge is concerned, the power to elaborate the hormone resides in the beta cells. These cells are spoken of as *diabetogenic* cells.

The first evidence adduced which connected the pancreas with carbohydrate metabolism, was accidentally stumbled on by the anatomist Brunner. Brunner (1682) and his co-workers maintained exception to the idea advanced by their contemporaries, van Helmont and Sylvius, that the pancreas is largely concerned in normal digestive processes. In order to prove his adverse opinion the pancreas of dogs was extirpated. Among these dogs was one that developed a marked polyuria and thirst, though otherwise it seemed but little affected. Brunner noted these symptoms, but, since his mind apparently was obscured by the one idea of proving van Helmont and Sylvius wrong, their significance was not studied. One cannot escape the conviction that Brunner, great anatomist though he was, did not possess that keen, analytical mentality that is the attribute of all real scientists. That his influence was great, however, was shown by the fact that his conclusion as to the non-importance of the pancreas in the mechanism of digestion discouraged attention to this organ for more than a century and a half.



It remained for Claude Bernard, the father of modern physiologic research, to throw light on the true rôle of the pancreas in digestion. He first directed his research to the effect of the pancreatic juice on fat and later to its effect on carbohydrates and proteins. These researches clearly demonstrated the great importance of the external secretion of this organ to digestion.

Dobson (1775) discovered that certain individuals suffering from polyuria had sugar in their urine. Nineteen years later Frank was able to differentiate diabetes mellitus and insipidus. Though it had been frequently suggested that the pancreas was concerned, in some important way, with carbohydrate metabolism, it was not until 1845 that Bouchardat described certain pathological changes in the pancreas in some cases of diabetes. Evidence pointing to the possible relationship of diseases of the pancreas to diabetes began to accumulate, but no definite attempt to determine the true nature of this relation was instituted until Claude Bernard attempted to throw light on the problem, by extirpating the pancreas of dogs and by occluding the excretory pancreatic duct by the injection of paraffin. These experiments were of little or no value because the animals soon died. In the light of later successful experiments of this nature, it must be concluded that Bernard's technique was faulty. However, these experiments were illustrative of the direct way which this great man always approached a scientific problem. In 1889 Minkowski and von Mehring succeeded in completely extirpating the pancreas of animals without causing death, and proved that such a procedure invariably resulted in severe diabetes.

First, Laguesse (1893) and, later, Shaefer (1895) expressed the view that, so far as the pancreas is concerned, diabetes must be attributed to alterations in the islands of Langerhans. Still later von Hausemann reported six cases of diabetes in which the islet tissue showed distinct hyaline degeneration. This study was carried much further by Opie, of this country. Because of his extended and able researches Opie decided that diabetes is due to involvement of these interesting structures. His studies attracted wide attention and were soon followed by similar research by numerous pathologists, resulting in confirmatory evidence. Thus Weichselbaum found the islet tissue of the pancreas involved in all of the 183 cases of diabetes he studied. Of special significance in this connection were the experiments of Schultze (1900)

and Ssobolew (1902). These investigators ligated the ducts of the pancreas, which procedure was followed by atrophy and in some instances apparent complete disappearance of the acinous tissue without, however, greatly altering the islands of Langerhans. No diabetes, nor even simple glycosuria, resulted in these instances until the pancreatic remnant was excised. Then these animals were thrown into severe diabetes. The results of these and similar experiments could not quite do away with the skepticism that prevailed regarding the rôle of the islet tissue in diabetes. This skepticism would be as evident to-day, had not insulin been discovered.

Assuming as we now must that in all cases of true diabetes the islet tissue is organically involved or, at the very least, functionally deficient, it is well to cite some of the conditions which lead to these changes.

The most frequent cause of diabetes is pancreatitis, either acute or chronic. An acute pancreatitis may be an expression of a general infection or focal infection, or may occur independently of infection elsewhere in the body. The symptoms of acute pancreatitis may be so overshadowed by those of some incidental or primary infective process as to escape notice, or they may be so slight that definite clinical symptoms, affording even suggestive diagnostic criteria, may be absent. In the pancreas, as elsewhere, chronic inflammation may be the result of micro-organisms of low virulence, acting in situ over long periods; or the result of repeated attacks by micro-organisms of different types; or it may follow an acute inflammation. The association of foci of infection with diabetes, supported by clinical cures upon the removal of such foci, is emphasized by some physicians. It has been known for some time that severe pancreatitis, with diabetes in many instances, may result from congenital or acquired syphilis. Warthin has placed special stress upon this phase of the subject. Cholecystitis, with or without gallstones, is frequently associated with pancreatitis. This is what should be expected because of the associated lymph supply of the two organs. Diabetes is an occasional expression of such cases. Diabetes from atrophy of the pancreas due to a fine sclerosis is of rather frequent occurrence, though simple atrophy, in which the secreting cells alone suffer, has also been described. Numerous cases of diabetes on the basis of congenitally small pancreas, have been reported. Such a pancreas may be able to meet the ordinary de-

mands placed upon it, though it readily succumbs when the functional demands become excessive from any cause.

Nutritional changes, due to lessened blood supply to islet tissue, lead to functional deficiencies, morphologic changes, and ultimate destruction of the cells, and too great a functional demand placed upon islet tissue that has escaped the above changes, may eventuate in similar alterations. With partial or complete destruction of the highly organized parenchymal tissue a replacement fibrosis results. This adds insult to injury, and the final morphology of the pancreas may so closely simulate, in appearance, the picture of chronic pancreatitis, that expert observation fails at accurate differentiation. Such changes as these are usually of slow development. Long before the loss of functional capacity has reached a stage manifested by frank clinical expression, it probably will be possible to discover slighter functional weakness by the application of sensitive tests. In this connection we must not overlook the possibility of similar changes taking place in the pancreas, due to any factor acting continuously over long periods that increases the functional demands of the islet tissue to a point beyond its capacity to supply.

Diabetes has been attributed to various affections of the liver and has been found associated with cirrhosis, chronic fatty degeneration, and gall-stone colic. The important function of the liver, assisting in maintaining the carbohydrate balance of the body, suggests the possibility that more or less marked destruction of this organ may lead to the development of diabetes. Rapid mobilization of glucose from liver glycogen is an accompaniment of diabetes and also occurs when the floor of the fourth ventricle or the splanchnic nerves are stimulated. Such mobilization may also result when, for any reason, the portal blood contains more acid than normal. Of particular interest is the apparent relation of the suprarenals in this connection. While the glycogen store is rapidly depleted when the left splanchnic nerve is stimulated, no such result follows if the suprarenals are first removed. Further, experimental glycosuria is produced when adrenalin is injected into the circulation or painted on the surface of the pancreas. The exact rôle of the adrenals in this connection is not known. In an early communication, to which reference will again be made, I suggested that an antagonism existed between the internal secretion of the pancreas and that of the adrenals, the former inhibiting and the latter aug-

menting glycogen conversion. This idea is championed by the von Noorden school, but I must confess that it seems less secure to-day than formerly.

A dog poisoned with hydrochloric acid develops glycosuria, whereas when an intravenous injection of sodium carbonate is substituted there ensues a rapid, marked, though transient lowering of blood sugar. Increased gastric acidity is said to produce hyperglycemia, and chronic hyperchlorhydria may eventuate in a frank diabetes. Such a hyperglycemia is explained as follows: Excessively acid gastric juice on entering the duodenum excites a greater secretion of the alkaline pancreatic juice, or an excess of acid gastric juice may cause regurgitation of pancreatic juice which continues until the optimum acidity of the gastric juice is reached. Either of these contingencies deprives the blood, temporarily at least, of some of the alkali necessary to maintain its acid-base equilibrium, so that there develops a relative excess of acid radical in the blood. This increased acidity of the blood circulating through the liver causes an abnormal conversion of glycogen into glucose, which is then emptied into the blood stream faster than it can be consumed. Anesthetics, such as chloroform and ether, hemorrhage, asphyxia, pregnancy, malignant and infectious diseases, and some cases of nephritis, cause hyperglycemia and glycosuria or hyperglycemia alone, through an upset of the acid-base equilibrium of the blood. Puncture of the floor of the fourth ventricle results in severe asphyxia, and this indeed may be the chief cause of the severe glycosuria that ensues. It has been shown that children, having an unstable acid-base equilibrium of the blood are peculiarly liable to acidosis, and show greater incidence of glycosuria than adults.<sup>1</sup>

Perhaps no condition has attracted more attention than obesity as a cause of diabetes. Both pathologic obesity, due to some endocrinopathy, and simple obesity probably cause diabetes "by imposing a burden upon the pancreatic function which tends to develop any latent diabetic tendency."<sup>2</sup> Both the tendency to become obese and the diabetic tendency may be inherited.

True diabetes developing on the basis of hyperthyroidism and hypophyseal disturbance must be attributed, it seems, to some disturbance of the pancreas, either a pancreatitis or some less obvious lesion affecting the islet tissue. Though excessive carbohydrate diet is thought by some authorities to cause diabetes, it probably does



so only in cases in which there is a diabetic tendency. Infection, by injuring the pancreas, may cause diabetes. When diabetes is once established, infection may increase its severity. Otherwise it has no direct relation. This is also true of trauma and nervous disturbances, particularly psychic shock. Injuries of the brain, especially if they result in irritation of the so-called diabetic center of the medulla, may cause a marked glycosuria, which might eventuate in a true, or pancreatic, diabetes. Heredity seems to play an important part in the development of numerous cases of diabetes. Allen points out that these cases "rest upon the basis of pancreatitis to the same extent as all other types of diabetes."

Thus far rather frequent mention has been made of *true diabetes*. In true diabetes the pancreas is probably always involved. Here there are not only hyperglycemia, glycosuria, and symptoms such as polyuria, polydipsia, polyphagia, etc., but a marked lowering of sugar tolerance, indicated by a marked and prolonged rise of blood sugar, over the fasting level; an increased output of urine sugar and lowered respiratory quotient, all indicating that only a minor portion of the test sugar is utilized. On the other hand the hyperglycemia, or glycosuria, or both, that appear in such conditions as hyperthyroidism, nervous conditions, hypertension, etc., before the pancreas is involved, are differentiated by the fact that when the glucose tolerance test is applied, all but a small portion of the glucose is utilized. In renal glycosuria the blood sugar is not raised and may even be lower than normal though glucose is passed in the urine.

Any hyperglycemia, with or without glycosuria, may develop into true diabetes, providing it is more or less continuous, prolonged, or severe. This is explained by the assumption that so great a demand is placed on the islet tissue of the pancreas, in the elaboration of its hormone to consume the excess of blood sugar, that these structures are unable, sooner or later, to meet it; are overworked, become exhausted, degenerate, and may be destroyed. As pointed out previously such destruction may ultimately lead to changes in the pancreas quite comparable to those of chronic pancreatitis.

Cases of juvenile diabetics in whom organic changes in the pancreas are not apparent, may really rest upon an anatomic basis, in which intracellular changes of the islet tissue are of such a nature that our present, rather awkward methods of study fail to reveal them. It seems im-

possible that continuous malfunctioning can rest on any other basis.

With the discovery of insulin it at once became apparent that its great specific capacity for rectifying the functional derangement of the islet tissue would establish it as a most valuable adjunct to routine therapeutic procedures. Hope was even expressed that the judicious employment of this powerful agent would lead to ultimate arrest or permanent cure of diabetes. Whether or not this hope is well founded remains to be seen. It is one of the purposes of this address to point out some evidence which indicates this possibility. Before discussing this phase of the subject, however, it might be of interest if some attention were given to certain events that led up to the discovery of insulin.

From the first, many workers whose studies of the pathology of diabetes had convinced them that the islands of Langerhans were, through an internal secretion, dominantly responsible for the complete utilization of glucose, entertained the hope that some day the active principle of these islets would be isolated, purified, and employed in the treatment of the disease. It is not surprising, therefore, that various attempts were made to accomplish this. Among those who attempted this were Zuelzer, Rennie and Fraser, E. L. Scott, Knowlton and Starling, Clark, Murlin, Kleiner, and Paulesco. Several of these investigators came very near success. Their ultimate failure was due to the employment of faulty methods of extraction. In 1922 Banting, Best, and Collip, working in Macleod's laboratory, employed fractional alcoholic precipitation and succeeded in obtaining a product which, though not pure, had a wonderful capacity for bringing about the combustion of glucose. Furthermore, this product was free from toxic products, which had largely been responsible for the failure of others working along similar lines.

Banting conceived the idea of ligating the pancreatic duct of dogs, just as had been done previously by Schultze and Ssobolew, thus causing the practical disappearance of the acinous tissue while sparing the islands of Langerhans. He then extracted the remaining islet tissue with ice-cold Ringer's solution. He hoped in this way to obtain a product "which would be free from the deteriorating or toxic effects of the products of the acinous cells." This work was primarily done with the assistance of Mr. Best. In 1912 E. L. Scott attempted to accomplish the same thing by the same means, but failed to produce degeneration of the acinous tissue, due possibly,

as suggested by Banting, to improper application of the ligatures.

The first extracts obtained by Banting and Best were found so effective, when injected into a depancreatized and thoroughly diabetic animal, that the animal became sugar-free and was able to tolerate a large amount of injected glucose. Naturally, not enough extract could be obtained in this manner to carry on the extensive experiments demanded, so means of obtaining larger supplies were devised. Insulin is now obtained from adult ox pancreas by means of alcoholic extraction. These and similar experiments conclusively proved that the islet tissue is the chief source of insulin supply.

From the time a rational dietary regime was instituted in the treatment of diabetes, cases of apparent cure, in mild as well as in severe diabetes, have been recorded in the literature. Other cases of apparent cure have resulted from the removal of foci of infection. Also, since the inauguration of insulin into the therapeutic armamentarium of diabetes, a considerable number of apparent cures have been recorded. John,<sup>3</sup> of Cleveland, reported two apparent cures of severe diabetes in adults. Though permanent arrest or cure seems probable in certain cases of true diabetes in adults, as well as in the young, present experience with insulin does not entirely support this belief. It is obvious that permanent arrest or cure must rest upon anatomic restoration of impaired or destroyed islet tissue. It is abundantly proven that such restoration actually takes place in a damaged pancreas. I first directed attention to this possibility. In a study of a series of cases of liver pathology, along with the study of the pancreas in each instance, an attempt was made to present anatomical evidence indicating the close relation between the carbohydrate function of the liver and the islands of Langerhans of the pancreas. While pursuing these studies an instance of hyaline degeneration of the islands of Langerhans was encountered at autopsy. The subject from whom this pancreas was obtained had never shown clinical symptoms of diabetes, nor was sugar found in his urine at the time of his admission to the hospital, nor prior to his death, when it was last examined. The pancreas showed the usual signs of advanced hyaline degeneration of the islands of Langerhans, the lesion most frequently involving these structures in diabetes. Most of the islands showed much or complete involvement. The uninvolved islands were very large, some being several times larger than the normal.

In commenting on this interesting finding, the following theories were advanced.<sup>4</sup> "That non-occurrence of diabetes in this case may be explained by the theory that the greatly enlarged, unaffected islands of Langerhans have fully assumed the lost or limited function of the affected ones. . . . Such a possibility is also suggested in those cases of diabetes in which the sugar content of the urine becomes lessened, or even disappears after varying lengths of time. Furthermore, in those cases in which a cure is affected by proper dieting the *modus operandi* may be explained in a similar way. . . . One may assume that during the process of dieting the healthy islands of Langerhans have undergone a sufficient hypertrophy to compensate for the decrease of functional activity in the unhealthy ones."

Following the publication of this article, Pearce, MacCallum, Cecil, Weichselbaum and Hexeimer, and others described similar hypertrophy of these islands, in pancreas affected by various disease processes, in cases of diabetes. Most of them considered the hypertrophy compensatory in nature.

Of particular interest in this connection are Allen's<sup>5</sup> experiments on dogs from which he removed varying amounts of the pancreas. Mild diabetes occurred when he removed all but one-eighth to one-ninth of the pancreas. With excessive carbohydrate diet these dogs were thrown into severe diabetes, from which they soon died. The beta cells in the islands were seen to have undergone hydropic degeneration, a condition found in the pancreas of a considerable number of cases of human diabetes. Allen considered this condition irreversible. Allen states that with milder experimental diabetes, a transitional stage is often observed following operation, when the outcome depends on the diet. If the tolerance is spared, some of these animals recover to such an extent that diabetes cannot be produced by any diet, but only by further removal of a fragment of the pancreas. A distinct hypertrophy of the pancreas-remnant, including hyperplasia of the islands of Langerhans accounts for the full recovery of sugar tolerance and the ability to produce further diabetes by excessive carbohydrate diet in some of these animals. The outcome in some of these experiments is very interesting and instructive, indicating, in a clear manner, the possibility of recovery of certain favorable cases of clinical diabetes in humans, on the basis of anatomic restoration of a damaged pancreas. Boyd and Robinson<sup>6</sup> give an in-



interesting account of a boy who had been a confirmed diabetic for seven years. He had been kept alive on a strict Allen diet, but was unable to gain in stature or weight commensurable with his age. He was finally put on insulin, properly controlled. His gain in weight, stature, sugar tolerance, and general well being within a year, despite the fact that insulin dosage was rapidly decreased, was remarkable. "From a chronic invalid in 1922, he became the leader of the 'gang' in 1923." He was accidentally killed, and an autopsy was performed immediately after death. The pancreas showed marked evidence of a regenerative process, consisting particularly of hyperplasia of the islet tissue. Commenting on the clinical and anatomical aspect of this interesting case, an editorial appearing in the *Journal of the American Medical Association* (April 18, 1925) expresses the following: "Presumably the insulin treatment, by relieving the strain on the already functionally deficient islet system, allowed the new islands to develop and assume their normal function. At least, it is an encouraging item of evidence, of particular value in this early period of insulin therapy, that, at least in juvenile diabetics, there may be the possibility, in some cases, of anatomic improvement, which means a real and permanent benefit for the patient."

The ability of the pancreas to regenerate is specially well shown by Bensley and his associates. Thus after the ligation of the duct, with subsequent degeneration and destruction of parenchymal cells, the duct was reimplanted into the bowel in such a way that its function was restored. This resulted in very complete restoration of the pancreas. Bensley is of the opinion that, under favorable condition, the capacity of the pancreas to regenerate is 100 per cent.

The dictum that hydropic degeneration of the beta cells of the island of Langerhans is evidence of irreparable injury, is no longer tenable in view of the experiments of Copp and Barclay. These investigators showed that if the damage of the islands of Langerhans had not progressed beyond the stage of hydropic degeneration of the beta cells, proper dieting and insulin therapy restored them, with resultant functional improvement.

Gray and Feemster<sup>7</sup> report an exceedingly interesting case showing that the pancreas of the unborn baby is capable of undergoing compensatory changes and thus largely compensating for the lost or limited carbohydrate function of the mother. The condition of the mother, a con-

firmed diabetic, was very bad near the beginning of pregnancy, there being high blood sugar and sugar in the urine along with symptoms of other disease processes. The diabetic condition progressively improved with the advance of pregnancy, and at its termination again assumed much more serious proportions and death followed. The child was well developed, of good weight, and appeared normal at birth. On the fourth day following birth, however, it died. Examination of this baby's pancreas revealed an enormous number of islands of Langerhans, many of which were hypertrophied. The authors probably rightly assume that the hypertrophy and hyperplasia of the islet tissue of the baby's pancreas was in response to a stimulus offered by the hyperglycemia of the mother. It also affords explanation of the improvement noted in the mother's diabetes, evident near term. They further suggest that hypoglycemia may have played a part in the death of the baby. The great increase in the number of islands in this pancreas suggests that the islet cells of fetal pancreas and that of children proliferate more readily than do those of older individuals.

A very similar case to the above was reported by Dubreuil and Anderodias.<sup>8</sup> In Carlson's laboratory a depancreatized, pregnant bitch showed no diabetes as long as the pups remained *in utero*. At their birth, however, a severe diabetes developed, resulting in death. Unfortunately, the pancreas of none of these pups was examined. Cases of pregnant diabetic women who, during the last month or so of their pregnancy, show improvement in carbohydrate utilization quite frequently come to the attention of physicians.

That there is a much more hopeful outlook for the diabetic, particularly for the young sufferers, is indicated by the expressions of many men whose large experience in the treatment of such cases makes them eminently qualified to judge. These expressions of faith, as it were, are rightly tinged with conservatism since clinical experience with insulin does not, thus far, warrant sweeping judgments.

John,<sup>9</sup> of Cleveland, has the following to say: "Theoretically, the cure of diabetes is possible provided the destruction process in the islands of Langerhans has not progressed beyond the reversible stage."

In an editorial appearing in the *Journal of the American Medical Association* (August 29, 1925) the following comments under the caption, "The Diabetic Child," are made in refer-

ence to recent clinical studies and observations of Joslin and his associates on the insulin treatment of diabetic children.

"The worth-while future of the underdeveloped diabetic patient depends fundamentally on a real regeneration of the lacking pancreatic tissue; otherwise, continuance of life means merely a precarious existence in the 'diabetic danger zone.' The evidence is still too meager to warrant prophecy, though there is nothing to gainsay the possibility of some success. The Boston clinicians, whose judgment is surely tempered by a long and unusually extensive acquaintance with the situation, are not pessimistic. As they express it, 'the prognosis of the diabetic child treated with insulin is still problematic, but clinical, therapeutic, and pathologic evidence sets no bounds.'"

Recognition of the potential and the pre-diabetic is essential if full success crown therapeutic efforts. It may be possible to prevent this disease on a large scale, if the general interest of the medical profession is so awakened that concerted, intelligent effort is put forth. An early recognition of the disease offers the best chance to restore the integrity of the pancreas. The physician should be on the constant lookout for cases of potential and early diabetes. Any individual showing even small amounts of sugar in the urine that are determinable by the older, less delicate methods for detecting reducing substances, should be closely observed and studied. In this study, fasting blood-sugar level should be determined, and, if found higher than normal, a tolerance test should be carried out, in which case both the urine and blood should be tested. All children in families in which there is any suspicion of an inherited diabetic tendency should submit to comparatively frequent tests. Children prone to acidosis also come in this category. "The physician who casually dismisses a patient with transient glycosuria, obesity, neuritis, pruritus, substernal pain, or furunculosis may find, some months later, that the case has developed into one of severe diabetes."<sup>10</sup> The examination of any case of hyperthyroidism, acromegaly and other endocrine disturbance is not complete unless it includes close and frequent study of blood and urine, with the idea of determining the status of sugar consumption. The all too frequent finding of glycosuria, hyperglycemia, or mild diabetes in individuals with no suspicious symptoms or history, strongly suggests that everybody should submit to yearly or semiyearly blood and urine analysis, to de-

termine the status of their sugar-consumption mechanism. Physicians should urge this before the public. In this connection it may be said that blood-sugar determination should be made in all suspicious cases as not infrequently the advent of glycosuria speaks for a serious condition that may be irreparable. Transient glycosurias may result from excessive eating of pure sugars. Such glycosurias seldom, if ever, result in normal man from excessive starch ingestion. Frequently it is impossible to get a normal man to retain enough pure glucose to cause its overflow in the urine. Such glycosurias depend upon the rate and amount of absorption from the bowel and the rate of utilization by the bowel wall and the liver. When, for any reason, the stored glycogen of the liver is so rapidly discharged into the blood stream, in the form of glucose, that the hormone of the islet tissue of the pancreas is unable to bring about complete consumption of all that which is in excess of the normal, glycosuria appears, except in those instances, possibly, in which the renal threshold is well above normal. As pointed out previously, puncture of the floor of the fourth ventricle, stimulation of the splanchnic nerves, and various diseases of the nervous system, upset of the acid-base equilibrium in favor of the acid radical and excess of the products of some of the glands of internal secretion may all cause glycosuria by the too rapid hydrolysis of liver glycogen. Glycosuria, except that due to special permeability of the renal epithelium, is an expression of hyperglycemia. Hyperglycemia if transient, but often repeated, or prolonged hyperglycemia results in functional deficiency of the islet tissue, which as has been intimated, is probably due to fine, unrecognizable changes in cell structure; or it results in distinct morphologic alterations with greater or less loss of cell integrity. The ultimate results of such excessive demands placed upon the islet tissue may be hard to differentiate from changes due to chronic inflammation of the pancreas.

We know that many highly organized cells of the body, if not too severely injured will regain, under appropriate condition, their full morphologic and functional capacity. What pathologist has not been impressed with the changes seen in the parenchyma of the kidney of certain cases of acute infectious disease, yet if such individual fully recover from the infection and an opportunity is afforded to examine the kidneys shortly after the infectious disease has disappeared, these structures may show no trace of injury.



In old cirrhotic lesions of the liver, kidney, and pancreas, for instance, there is found abundant evidence of regeneration of highly specialized tissue. In the liver new liver cords are produced by proliferation of duct cells and possibly also by mitotic division of adult liver cells; in the kidney, regeneration of the tubules seems to rest upon the power of normal adult tubal cells undergoing mitosis, while in the pancreas regeneration of the islet tissue may be due to proliferation and differentiation of cells of the ducts and also through mitosis of normal, adult islet cells. As has been abundantly proven, the pancreas seems to possess an unusual capacity to regenerate. When we learn how to control this regeneration in various kinds of destructive processes of the pancreas, then, and not until then, will our diabetic therapy be rational. So long as our treatment remains largely symptomatic, as it is at present, so long as its aim is not definitely directed toward permanent arrest or recovery from the disease, just so long must it be considered largely inadequate. Both anatomical and clinical results seem to offer some hope of attaining the ne plus ultra of rational therapy. Obviously though, in such cases of diabetes as do not rest upon primary injury of the pancreas, the underlying cause must first be ascertained and disposed of, or the most efficient dietary and insulin treatment will fall short of an ideal outcome. Furthermore, if we expect an overworked, functionally deficient islet tissue to "come back," this must be effected by giving

it strict rest for longer or shorter intervals. This means that the diet, insulin, and other treatment should be so administered as to result in sufficient glucose utilization, with little or no intervention on the part of the islet tissue. In other words, the overworked and partially damaged islet tissue must be so completely rested that when it is stimulated to new efforts by the addition to the diet of more carbohydrates, or when through the gradual withdrawal of insulin, a greater and greater demand is placed upon it, it will be able to respond in a normal manner. Such treatment as this can be carried out only in hospitals, under the guidance of scientific laboratory procedures. All this may sound like an utopian dream, but, gentlemen, if we dream at all, let us dream of attaining the ideal, and bend our efforts to its accomplishment.

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## PRESIDENT'S ADDRESS: REPAIR OF INTERNAL RING IN OBLIQUE INGUINAL HERNIA\*

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The internal ring is the landmark that distinguishes indirect from direct inguinal hernia. In the former the internal ring transmits the sac of the hernia; in the latter the sac passes below the inferior margin, and not through the internal ring, being practically a ventral hernia in the inguinal region, either through the conjoined tendon or through the linea semilunaris.

The internal ring may be likened to the "keystone of the arch" in Nature's architecture of

the inguinal canal, that under normal circumstances helps prevent the protrusion of viscera through the inguinal canal.

It is situated at the entrance to the inguinal canal, and it is reasonable to suppose that, if this structure is normal in its relationships, contents, size, and position, indirect hernia would rarely develop.

The internal ring is important because its size, its position, and its relations determine the length, obliquity, and the character of the walls of the canal. All of which are most important in Nature's method of preventing the development of oblique inguinal hernia.

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Consideration of its size alone shows that, if small, it is high, which means the canal is long and oblique, its lower border and the posterior wall of the canal is strong, firm, tense, composed of transversalis fascia, reinforced by the Ligament of Hesselbach, and the anterior wall of the canal is composed of red internal oblique muscle and external oblique aponeurosis.

On the other hand, if the ring is large it is low and wide, which means the canal is short and straight, its lower border and posterior wall are weak, relaxed, often absent, and the anterior wall is composed of only external oblique aponeurosis.

These relationships are shown in parallel columns as follows:

	Internal or abdominal inguinal ring	
	Normal	Abnormal
Abdominal aspect	Smooth, parietal peritoneum	Bulging parietal peritoneum, hernial sac
Cutaneous aspect	Internal oblique muscle	External oblique aponeurosis (Int. oblique above internal ring and sac.)
Superior margin	Transversalis fascia	Same
Inferior margin	Transversalis fascia reinforced by fold of ligamentum interfoveolar	Same <i>but</i> inferior margin may be depressed to pubic bone, depending upon contents of sac
Contents	Cord only, or cord and preformed sac	Cord, sac, and contents of sac
Size and position	Small and high	Dilated and inferior lower margin.

As the abnormal internal ring allows the protrusion of the sac, or the filling of a preformed sac, and the sudden, or gradual, development of hernia, the normality or abnormality of the internal abdominal ring is followed by normality or abnormality of the inguinal canal as follows:

*The normal inguinal canal is long, 1½" in the male and 2" in the female, oblique, narrow and contains no sac, the internal ring is high, small, snugly surrounds the cord, and is covered externally by internal oblique muscle (active mus-*

*cular check at entrance of canal), and the external ring is low, small, and triangular.*

*The hernial inguinal canal is short, straight, wide, and contains the sac which often extends to the scrotum, the internal ring is lower, dilated, and is not covered externally by internal oblique muscle, and the external ring is dilated upward and rounded.*

These relationships are shown in parallel columns as follows.

Structure	Normal	Oblique	Abnormal (hernia)
			Direct
Parietal peritoneum	Smooth, no sac	Sac above internal epigastric artery	Sac below internal epigastric artery
Transversalis fascia	Strong and tense	Strong and tense	Weak, relaxed
Internal inguinal ring	High, small, snugly surrounding the cord	Dilated downward, cord at lower margin transmits sac which is above cord	Not unduly dilated, cord above and does not accompany sac which is below
Internal oblique muscle	Is anterior to internal ring and covers upper part of cord	Is above internal ring and does not cover the sac and cord	Is usually above internal ring and does not cover sac and cord
External oblique aponeurosis	Covers internal oblique muscle and lower cord	Covers internal ring sac and cord	Covers internal ring, sac and cord
External inguinal ring	Small, triangular, transmits cord	Dilated upward and rounded transmits cord and often sac	Dilated upward and rounded, transmits cord and more rarely sac



As the internal ring is not primarily involved in direct hernia this type will not be discussed.

#### Treatment.

Given, a man with oblique inguinal hernia on one side and normal inguinal relationships on the other, as outlined above, in an attempt at repair of the hernia, what could be more rational than to replace the various structures on the hernia side in the normal relationships, instead of the usual attempt to improve upon Nature?

The essentials for the repair of oblique inguinal hernia seem to be—

1. The removal of the entire sac.
2. Reconstruction of the inguinal canal along anatomic lines based upon knowledge of the normal and pathologic anatomy, and physiology, which must, of necessity, vary with the type of hernia.
3. Primary wound healing.

The first and third seem practically easy to attain; but the second is not so simple. Much consideration has been given to the walls of the canal and external ring, but the importance of the *internal* ring seems to have been given little serious attention. To be sure a new (abnormal) internal ring is constructed in the Bassini, its various modifications and in other plastic operative cures for inguinal hernia, but the importance of the *normal* internal ring, its relations and the advisability of reconstructing, or imitating, the normal characteristics of this opening have been comparatively unemphasized.

The method of Bassini is almost a standardized procedure in repair of inguinal hernia, but its result is not anatomic in that the red internal oblique muscle is placed around and below the internal ring instead of covering it superficially, as it does under normal conditions.

This Bassini repair has been much modified: by Wyllys Andrews, Ferguson, Halsted, Woelfler, Gerard, Fowler, others and, more recently, by Bates, Harrison, Kerby, Slatterly, Downes, Schley, Stetton, Lyle, Edmund Andrews, Pitzman, Seelig, and others.

Seelig, in 1923, caused considerable controversy by claiming that fascia and muscle would not unite, but Koontz, in 1926, was unable to confirm Seelig's findings, and in 1927, Seelig in an article entitled, "Fundamental Principles Underlying the Operative Cure of Inguinal Hernia," finds that fascia will unite with epimysium, perimysium, and endomysium (the connective tissue covering and between the muscle); and that traumatized muscle, because of the exposure

of the fibrous tissue trabeculae, will unite satisfactorily with tendon and aponeurosis.

After the *proper* reconstruction of the internal ring, suture of the internal oblique muscle to Poupart's ligament will rarely be indicated because the muscle will, without suture, cover the ring.

The normal relationship may be re-established by—

Elevation of the ring to a position *behind* the muscle, or depression of the muscle in *front* of the ring.

The former is much more satisfactory, but if, in larger hernia simple elevation of the ring is not sufficient, the muscle, after traumatizing, may be sutured to the outer half of Poupart's ligament with every reason to expect union between muscle and fascia.

In the direct, or the large indirect, hernia with relaxed abdominal walls and obliterated or absent conjoined tendons and transversalis fascia, in which satisfactory sutures require so much tension as to defeat their purpose, a plastic operation, preferably with transplantation of living tissue, will be called for; but such plastic operations do not change the underlying *principles* of the attempt to correct the abnormal inguinal anatomy.

Koontz finds that heterogenous fascia may be used satisfactorily, and such fascia is promised for the general market.

The transplantation of free flaps of fascia lata (as advocated by Kirschner, 1910) has been successful in repair of hernia defects, but has now been largely superseded by the modification of Gallie and Le Mesurier in which the fascia transplant is cut in narrow strips and the defect repaired by a darning or interweaving process—this gives much more marginal contact and, therefore, more likelihood of survival. Such transplantation of tissue is called for in large defects and often after previous attempts at cure.

The imbrication of the external oblique aponeurosis in the method of E. Wyllys Andrews is, in effect, a fascia transplant, as is Mac Arthur's utilization of a strip of this same aponeurosis for suture material.

I have utilized the tissue of old large thick sac walls themselves as a living suture material in certain cases. It is only in large herniae that such material is available and likewise only in such cases that there is a call for such utilization.

Realizing the importance of the natural or normal obliquity of the canal and its valve-like action in preventing hernia and being impressed

with the importance of the inlet of the canal and its protection by red internal oblique muscle, as early as 1908, I discussed this subject, "Radical Operation for the Cure of Oblique Inguinal Hernia," (S. G. & O., October, 1908, p. 481-483) and "The Repair of the Internal Ring in Oblique Inguinal Hernia," (J. A. M. A., April 3, 1909, vol. lii, pp. 1087-1089) and called attention to the shortcomings of the non-anatomic Bassini and Ferguson methods, and presented a technic which repaired the internal ring in such a way as to make the canal, the relations of its inlet, its walls and its outlet, the same as they are in the person without a hernia.

The indication for treatment is therefore to imitate Nature, remove the sac, and make the canal long, oblique, and small with an active muscular check at entrance.

The steps in such an attempt may be as follows:

1. Skin incision. Expose external ring and external oblique aponeurosis; superficial epigastric artery usually requires ligation.

2. Divide external oblique aponeurosis parallel to fibres; expose inguinal canal and contents; preserving ilioinguinal nerve.

3. Mobilize cord; remove fat and veins if necessary.

4. Isolate and open sac. Examine contents, replace same. Separate adhesions if present. Recognize sliding hernia or bladder in wall of sac (rare in indirect hernia). Examine posterior wall of inguinal canal, determine size and position of internal ring. Search for direct hernia or pantaloon sac with finger in peritoneal cavity.

5. Reconstruct internal ring and posterior wall of canal. Internal ring to be minimized and elevated by repair of the transversalis fascia below the cord. If transversalis fascia is markedly attenuated some type of plastic operation such as Parks, Mac Arthur, Andrews, or Gallie will be indicated.

6. Remove sac high up, leaving no redundant parietal peritoneum to pouch outward as a potential sac. Close neck of sac by suture, not a simple circular ligature. Suture of internal oblique muscle to Poupart's ligament is rarely necessary as the internal ring is elevated and placed behind the internal oblique muscle.

7. Reconstruct anterior wall of canal by suture of the divided external oblique aponeurosis, by imbrication or not, according to the extent of relaxation.

8. Reconstruct external (subcutaneous) ring from above downward, in this way increasing the obliquity and length of the canal.

9. Closure of fascia and skin.

Statistics, because of a multitude of variable factors, are many times misleading and are notoriously unreliable; but Pitzman has well said "If the theory of this operation is better, ipso facto, the practical result will be better." The result in the individual case may depend upon circumstances other than the method of operative repair, such as sex, occupation, age, physical condition, the size and contents of the sac; the accurate differentiation between direct and indirect types; technical errors or faults such as: failure to remove all of the sac or to recognize a double or pantaloon sac, or to remove dilated veins or fat, injury to nerve, placing stitches under too great tension or postoperative complications or accidents. But the most important cause of recurrence is probably the failure to establish the correct relationship between the type of hernia and the character of the operative technic in the individual case, for example, utilizing one method as a routine in all cases of inguinal hernia.

Published statistics show a great variety in the percentage of recurrences after attempt at repair, from less than 1 per cent to 10 per cent for indirect and from 14 per cent to 25 per cent for direct.

Personal cases in the service of Dr. C. J. Combs and myself show: with transplantation of the cord, that is, suture of internal oblique muscles under cord 137 cases traced with 8 recurrences 5.8 per cent; without transplantation of the cord, that is, in which the internal oblique muscle is not sutured under the cord, 225 cases, 162 traced with 4 recurrences 2.46 per cent.

As in all statistics these figures are likewise misleading, in that the early, simple, small herniæ are in the more favorable group, while the late, complicated and larger cases are in the less satisfactory group.



## PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

Meeting of May 11, 1927

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town & Country Club on Wednesday evening, May 11, 1927, at 8 P. M. Dinner was served at 7 P. M.

The meeting was called to order by the Vice-president, Dr. John E. Hynes. There were 29 members present.

Minutes of the April meeting were read and approved.

The scientific program was as follows:

Dr. C. F. Nootnagel (Minneapolis) read a paper entitled "Extragastric Closure of the Pylorus."

Starting out with the well-established fact that suspension of function of any organ irritated or inflamed will enhance its recovery; for example, putting an inflamed knee-joint at rest enhances its recovery, and the same holds good for all other inflamed or irritated parts of the body. Therefore, when we have an ulcer of the duodenum or of the pyloric end of the stomach, a suspension of function of this part of the alimentary tract would be an ideal treatment for its healing. In order to attain this suspension of function the present-day treatment has been a gastrectomy of the pyloric end of the stomach associated with a gastro-enterostomy. This procedure is attended by a varying operative mortality of a rather high degree. In order to avoid some of the risks of a gastrectomy, I cast about for some other means to attain the same result. Dogs were chosen for the investigation of extragastric closure of the pylorus, and simultaneously some of the conclusions of Alvarez on peristalsis and reserve peristalsis were to be utilized by administering 2 drams of metallic Hg. after each anesthesia in order to lessen the tendency to post-operative vomiting (reverse peristalsis). Alvarez (p. 18) has shown the characteristic of smooth muscle in hollow organs is its responsiveness to tension. Most of the motor activities of the stomach and bowel are brought about and regulated largely by the internal pressure due to the presence of food, gas, or other contents. Cannon (p. 187) has shown that the rhythmic segmentation in the small intestine is due simply to the fact that those muscle fibers which are stretched tend to contract. Their contraction increases the pressure in neighboring segments and so the process goes on. As Cannon points out, these reactions to stretching are purely local and are not brought about by nervous reflexes. Alvarez (p. 37) points out that in the gastro-intestinal tract there is a gradient of rhythmicity and (p. 41) a gradient of propulsive force and (p. 53) a gradient of irritability extending from the stomach to the rectum, therefore the Hg. was administered to start the contractions in the alimentary tract in the right direction after anesthesia in the hope that contractions started properly would continue thus and avoid vomiting. Alvarez (p. 120) points out that vomiting can sometimes be stopped by giving solid food,

which may act perhaps by raising the tone of the stomach and restoring the downward gradient. The following investigation will show how this procedure worked in dogs.

The operative procedure to close the pylorus wholly or partially was performed in three different methods:

1. The pyloric muscle, one-half inch wide, was raised anteriorly from the submucosa beginning at the gastrohepatic omentum and ending at the gastrocolic omentum, where it was cut across, an opening was made through the gastrocolic omentum, the dissected pyloric muscle was pushed through this opening and sutured to the posterior gastric wall on top of the peritoneum. This maneuver necessitated the folding of the anterior gastric wall upon itself.

2. A strip of peritoneum and pyloric muscle, an inch wide, was raised in the same manner as the first, an opening made through the gastrocolic omentum, the posterior gastric wall was incised down to the submucosa, the edges of the incised peritoneum and pyloric muscle were spread apart, and the anterior strip, after folding the anterior gastric wall upon itself, was securely sutured, muscle to muscle and peritoneum to peritoneum.

3. The pylorus was telescoped into the stomach and securely sutured by three rows of No. 1 twenty-day chromic catgut, taking good bites through peritoneum and muscle.

Results: Five dogs were anesthetized for thirty minutes and 2 drams of Hg. administered. No emesis followed in any of them.

February 20, 1926, No. I: Pyloric closure by first procedure, posterior gastro-enterostomy, administration of 2 drams Hg. No emesis.

February 26, 1926, No. II: Died from careless anesthesia before operation.

March 3, 1926, No. III: Pyloric closure by first procedure; 2 drams Hg. No emesis.

March 8, 1926, No. IV: Pyloric closure by second procedure; 2 drams Hg. No emesis.

March 10, 1926, No. V: Pyloric closure by second procedure; 2 drams Hg. No emesis.

May 4, 1926, No. VI: Pyloric closure by second procedure, with the addition of suturing the edges of the anterior gastric incision together; administration of 2 drams Hg. No emesis.

May 11 1926, No. VII: Pyloric closure by third procedure; 2 drams Hg. No emesis. The wound became infected and the dog died on the eighth day. Postmortem revealed generalized peritonitis.

June 1, 1926, No. VIII: Pylorus closed by third procedure; 2 drams Hg. No emesis. Eventration seventh day; death eighth day.

June 12, 1926, No. IX: Pylorus closed by third procedure; 2 drams Hg. No emesis. Dog died the seventh day without showing any peritonitis; wound healed.

Nos. VII, VIII, and IX all showed beginning gangrene in the pylorus.

March 12, 1926, Nos. I and II: X-rayed an hour after a barium meal; stomach empty.

March 22, 1926, No. IV: X-rayed half an hour

after barium meal, closure good, 70 per cent empty.

March 22, 1926, No. V: X-rayed half an hour after barium meal; closure good, 30 per cent empty.

May 15, 1926, No. VI: X-rayed half an hour after barium meal; closure good, 50 per cent empty.

April 9, 1926, No. I: Pylorectomy; pylorus partially closed; 2 drams Hg. No emesis.

April 12, 1926, No. III: Pylorectomy, poor closure; 2 drams Hg. No emesis.

April 21, 1926, No. IV: Pylorectomy, good closure; 2 drams Hg. No emesis.

April 27, 1926, No. V: Pylorectomy, good closure; 2 drams Hg. No emesis.

June 10, 1926, No. VI: Pylorectomy, good closure; 2 drams Hg. No emesis.

All external wounds were closed by subcuticular suture and smeared over with several applications of collodion. None of the dogs licked their wounds; open except No. VIII, and in this case we were not certain what caused the fatal result.

I have operated on one patient for duodenal ulcer by the second procedure, with a good result.

History: Man, 48 years old. Family history, negative; past history, negative; occupation, flour-bolter. During the night of November 1, 1926, he was seized with incessant vomiting after indulging in a generous midnight meal of chow mein. I saw him November 2, 1926, still vomiting; and this continued with slight variations to December 15, 1926, when he suffered a severe gastric hemorrhage. He was sent to the hospital and transfused a number of times with great benefit. December 29 we considered an x-ray safe and found him suffering from a duodenal ulcer. On February 4, 1927, preceded by a transfusion, I operated on him by the second procedure, and he made a splendid and uneventful recovery. He resumed his occupation April 25, 1927.

The ulcer was situated about two and one-half inches below the pylorus facing the gall-bladder. There were many adhesions extending from the duodenum to the gall-bladder and the liver.

April 2, 1927, x-rays were made, showing good occlusion of the pylorus, although some barium could be forced through the pylorus by kneading the stomach vigorously.

Summary: Five dogs subjected to fifteen anesthetics, each time being given Hg. 2 drams, without emesis. Three additional dogs were anesthetized and operated on and Hg. 2 drams given without emesis. The first five dogs were each operated on twice without a single death. The additional three dogs were subjected to but one time of operation, and all died, one from peritonitis, one from eventration, and the other from beginning gangrene of the pyloric portion of the stomach, and I feel that the first two would eventually have died of gangrene of the pyloric portion of the stomach if no intercurrent trouble had killed them. The specimens removed all showed beginning gangrene. The best closure was in No. VI, as evidenced by the specimen. In this case the edges of the anterior incision were brought together and sutured, throwing the underlying mucosa and submucosa into folds strengthening the occlusion.\*

\*Walter C. Alvarez: *The Mechanics of the Digestive Tract*.

H. B. Cannon: *The Mechanical Factors of Digestion*.

## DISCUSSION

DR. A. SCHWYZER (St. Paul): This just shows again that there are several roads that lead to Rome. In closing the pylorus I have used three different methods. By putting a double forty-day chromic catgut around the pylorus in some cases we have sufficient effect, where we had to be in a hurry, but were anxious to protect a bleeding or perforating duodenal ulcer. For many years we have closed the pylorus in every case of bleeding or perforating duodenal ulcer, where the ulcer could not be excised. Catgut, of course, is only of very temporary protection, and was used a few times after suture of perforated ulcers. Then we have taken fascia, about half an inch wide, from the edge of the rectus sheath, thrown it around the pyloric portion of the stomach, and fastened the ends together with two or three linen stitches. In two cases we could control things afterwards. In one case there was nothing to be found any more; the fascia was absorbed. In another case where I had done this, I had to operate again four or five years later for a tuberculous appendicitis and peritonitis. We pulled the stomach into view and saw a very pretty picture. The fascia had become round and smooth and looked like mother of pearl. There were no adhesions to the surroundings.

In my last cases I have used the round ligament of the liver, which seemed an improvement. It is freed from its attachment to the navel, thrown around the pylorus and fastened with linen or silk sutures. We thus have a living structure, which ought to guard against absorption.

Dr. Nootnagel's procedure attacks the pylorus itself, as von Eiselberg does in the radical division of the pylorus. Where a permanent impermeability is strived for, the more extensive procedures will give greater assurance.

DR. H. A. H. BOUMAN (Minneapolis): I would like to know more about the mercury.

DR. NOOTNAGEL (closing): I read in a book about 100 years old that they gave mercury for intestinal obstruction. Evidently they did not know much about the pathology of intestinal obstruction, but some of the cases got well. And after reading Alvarez's book I decided that if you put anything in the intestine that is heavy you start peristaltic movements. I put it in with a stomach tube. It will start the gradient of rhythmicity in the stomach, and it will go on down. I was under the impression that if you could start that right it would keep on. I don't know how right or wrong it is, but none of these dogs vomited; some retch after the stomach tube is put in and taken out, but no mercury came up. We had 18 in which we gave mercury and not one vomited.

I operated on a woman the other day, and I feel sure that we could have saved her if we had given her mercury in time. She died of post-operative ileus.

(How much do you give?)

They gave patients up to 1 oz. in weight it was said in the book I read. I was just casting about to see if I could find something to avert vomiting in operations on the stomach.

Dr. A. R. Hall (St. Paul) reported a case of "Diffuse Primary Thrombosis of the Vessels



of the Lung."

The case history which I wish to present is that of a man who, at the time of his death on March 16, 1927, was 73 years of age. He was born in Scotland and was, by occupation, a building contractor.

There was nothing of significance in his family history. As a child he had had measles. At the age of 23 he was said to have had pleurisy. When 27 years old he sustained a fracture of the right leg, and in 1906 he had an operation for an inguinal hernia. During the past ten years he had, on several occasions, a mild bronchitis, which lasted a few days only. In December, 1925, he had a respiratory tract infection which began acutely with a chill. His temperature in this illness ranged from 100° to 102°; pulse, from 80 to 95; and leucocytes, 12,600. There was a mucopurulent expectoration but no blood. The chest showed moist râles scattered throughout, but no demonstrable consolidation. He recovered from this attack in about two weeks.

He was accustomed to use considerable tobacco, and, although he did not use alcohol regularly, he had, up to ten years ago, occasionally taken alcoholic beverages to excess.

Since the early fall of 1926 he had noticed some shortness of breath on exertion and had had a slight cough, but no expectoration. About November, 1926, he began to notice some slight swelling of the ankles. There was a gradual increase of the dyspnea, and of the edema of the ankles.

When examined in the early part of February, 1927, he complained of shortness of breath on exertion, a sense of tightness in his chest, and a cough, but still very little expectoration. He said he felt most comfortable when sitting in a chair, but could sleep when lying flat in bed. He was most comfortable when lying upon his face. (This had not previously been his customary way of sleeping.)

He was a strongly built, muscular man. There was moderate edema of the legs and slight cyanosis of the lips and fingers. He had a large chest, which was deep in its anteroposterior diameter. Although he was complaining of dyspnea, the respirations were only about 20 to the minute unless he exerted himself, as in removing his clothing for examination. The respiratory excursion was limited. Percussion note was somewhat hyper-resonant. Breath-sounds were heard normally throughout the chest with no accompanying râles. Pulse rate was 82 per minute and regular. The radial arteries were palpable, but not decidedly sclerosed. The cardiac impulse could be felt inside the nipple line and was not unusually strong or diffuse. Cardiac dullness extended rather widely, both to the right and the left, and on percussion gave a total dullness of 14 cm. The heart-sounds were heard both at the apex and the base. There was some accentuation of the pulmonary second sound. There was a soft, short systolic murmur at the base not transmitted to any great distance in any direction. His liver could be palpated one finger's breadth below the costal border, but was not tender. Otherwise there was nothing of note in the physical examination.

He remained in much the same condition until he was sent to the hospital on March 14, 1927. The edema had increased slightly. A moderate cyanosis remained, and he continued to complain of a sense

of oppression in the chest and of shortness of breath. It was not thought that he was in any immediate danger. However, after being in the hospital thirty-two hours he rang for the nurse, complained of great oppression in the upper chest, and in a few minutes was dead. There had been no fever, his pulse usually ran between 80 and 95, and his respirations from 18 to 24. His chest was practically always free from any abnormal sounds, but occasionally during his last illness there had been a few scattered moist sounds, never any dry râles. Although the edema of the legs had increased, it was never very marked, and the same was true of the cyanosis. His blood pressure had been recorded in 1921 as 140 systolic and 80 diastolic. In November, 1926, it was 130 systolic and 80 diastolic. In February, 1927, it was systolic 130, and diastolic 75. No electrocardiograms were taken. His urine was normal in amount and specific gravity, and had shown nothing abnormal except that since February there had been a trace of albumin. In 1921 there had been x-ray plates of his chest taken. In these the heart did not show any definite enlargement, and there was nothing of note in the lung shadows, but there were some enlarged glands about the lung hilus on either side. He was thought to have a mild emphysema and a degenerated heart muscle caused probably by sclerosed coronary vessels.

An autopsy was made by Dr. Warwick about nine hours after death. It was found that the heart was very definitely enlarged (weight, 710 grams), and while both sides were hypertrophied and dilated this was definitely more marked in the right heart than in the left heart. At the root of the pulmonary artery, just about 3 cms. above the attachment of the valve leaflet there was a grayish red thrombus, which was firmly attached to the vessel wall and which occupied two-thirds of the space of the lumen. Superimposed on this old gray thrombus was a recent, soft, red thrombus which entirely filled the remaining lumen of the vessel and caused complete occlusion. These thrombi, both the older and the recent, extended down to the pulmonary artery where it entered the lung on either side and the fresh thrombus completely filled the lumen of the vessel at the point of bifurcation. This thrombus did not show definite organization except near the point of its attachment. It was very firmly adherent to the intima of the pulmonary artery over the entire side where it was located. When separated it left a slightly roughened reddish surface. It would seem that this gray thrombus had existed at least for some days. There were no obvious changes in the walls of these arteries. The coronaries appeared to be entirely normal and the root of the aorta showed slightly raised, yellowish plaques.

The right lung weighed 730 grams and the left lung 640 grams. Both were dark in color, probably from black pigment. The edges of the lobes showed moderate emphysema. Gross sections showed no areas of consolidation but simply a dry, fluffy parenchyma in which there was marked deposit of black pigment. Practically all of the branches of the pulmonary artery were occluded by thrombi. In many instances these thrombi were attached to the vessel walls, which appeared thickened throughout.

Many of the smaller branches out near the periphery showed a thickening, which made them resemble much larger vessels. On microscopic examination the pulmonary artery in all of its branches throughout the lungs showed an infiltration with lymphocytes and occasional pus cells throughout the wall. Practically all of these vessels were occluded by thrombi which were attached to the wall at one of several points and which showed in some instances a beginning regeneration. The walls of the pulmonary artery just above the pulmonary leaflets showed the same cellular organizations and there was a beginning organization of the attached thrombi.

The spleen weighed 250 grams; capsule was gray in color and covered by numerous white nodules, in which there were deposits of calcium salts, and which evidently represented an old perisplenitis.

The liver weighed 2,540 grams, was pale in color, with prominent red mottlings, giving the nutmeg appearance of chronic, passive congestion.

The kidneys each weighed 180 grams; capsules stripped easily, leaving smooth, shiny surfaces. On the left side there was a depressed scar which gave a puckered appearance. Gross sections showed cortices to be slightly thin with markings distinct.

There were enlarged lymph nodes at the bifurcation of the trachea, dark in color, homogeneous in consistency, and showing no evidence of either calcification or caseation.

The aorta showed throughout its entire length numerous slightly raised yellowish patches. These had no calcification or ulcerations.

There was nothing else of note in the general autopsy findings except that this tendency to thrombosis of the arteries was not present in any of the viscera except the lungs.

We had, then, a diffuse thrombosis of the arteries of the lungs and with it changes in the vessel walls with no similar changes of the vessels of any of the other viscera, and apparently due to the increased resistance of the blood current in the lesser circulation there was produced an hypertrophy and dilatation of the right heart, with symptoms of failure of the right heart: dyspnea, edema and cyanosis.

This is the first opportunity I have had to see such a case, but a number of cases have been written up by different authors. Eppinger, in 1920, reported in detail, five cases that had come under his observation, and he collected fourteen more from the literature. Gehrt, in 1923, reported seven cases in 660 autopsies at the Children's Hospital in Berlin. Some of these were in quite young children. Two of his cases had had la grippe and five had had measles. All had had a more or less protracted pneumonia. In some of his cases bacteria were found in the thrombi and vessel walls. In one report a reference is made to a case reported by Flexner and Welsh, in which the influenza bacillus was found in the thrombi (I have not seen the original report of this case). Lang gives the history of a patient in whom the symptoms began shortly after an attack of typhus. In most of the cases reported there has been much more edema and cyanosis than in our case. It is probable that had this case not been carried off suddenly by the large thrombus in the pulmonary artery he, too, would have progressed to severe symptoms of heart failure.

Various diagnoses have been made in these cases

during life, but rarely the right one; although when two or three cases have come under the observation of the same man a correct diagnosis has frequently been made, and it has been made through the demonstration of an enlarged right heart and the failure to find any of the usual reasons for this right heart enlargement, such as mitral disease, emphysema, fibroid lungs, or congenital heart. In many of the reported cases mention is made of the dilatation of the pulmonary arteries at the root of the heart and of a corresponding narrowing of the pulmonary veins. (This was not noted in our case.) Mobitz, in describing the *x*-ray findings, lays stress on the clear-cut second bulge on the left side of the heart shadow. This, he thinks, should suggest a widening of the pulmonary artery.

As to the cause of this thrombosis, no proven theories have been put forward. It occurs at all ages, and it does not seem to be at all related to arteriosclerosis. There seems to be some evidence that it is an inflammatory process produced by bacteria. In our case there at least was a round-celled infiltration of the vessel walls. It is possible that the patient's previous respiratory tract infections had something to do with the inflammatory reaction in the arterial walls and in the formation of the thrombi.

#### DISCUSSION

DR. H. L. ULRICH (Minneapolis): This is a most extraordinary case. The question in my mind is whether we ought to emphasize the thrombosis or the arteritis. Thrombosis, in most instances, is due to some infection. Here the infection in the vessel walls predisposed to thrombosis. The case reminds me of one we had at the General Hospital, a man about thirty years old, who was treated for six or seven months for a cardiac condition. He had right-sided hypertrophy and left-sided hypertrophy, too. There was no cyanosis, but evidence near the end of congestive failure. The interns hung on him the diagnosis of fibroid tuberculosis, then hyperthyroidism, then, as a cardiac murmur developed, of subacute bacterial endocarditis. Chronic mediastinitis and chronic pericarditis were also suggested. At post-mortem he had pulmonary arteritis with multiple thrombosis. The systemic circulation was free. There was a mural thrombus in the left ventricle.

The only clinical signs of this condition are hemoptysis and right-sided hypertrophy. Of course we are on the lookout for another case.

DR. HALL (closing): My understanding of the condition is the same as that expressed by Dr. Ulrich; that is that it apparently begins as an inflammatory process in the vessel wall and that the thrombosis is secondary to this inflammatory process.

Dr. A. E. Benjamin (Minneapolis) reported a case of "Mesenteric Cyst."

Patient, Mrs. F. M. A., aged 53, housewife, married thirty years, American; height, 5 feet 8 inches; weight, 115 pounds. Patient has lost a great deal in weight. The patient's father died at 79 of hicough; mother, at 72 of tuberculosis; an aunt died of tuberculosis, and a grandfather died of cancer.

Past history: Patient had influenza in 1918; had mumps at 35; rheumatism for twenty years, especially in the hands; appendicitis five years ago. Pa-



tient's teeth have not been attended to of late. The patient is nervous and irritable. Has palpitation and fluttering of the heart at times; and also pain resembling gall-stone colic for several years with apparent enlargement of the gall-bladder.

Menstrual and marital history: Menses began at age of thirteen, regular up to last few years. Some dysmenorrhea, duration three to five days. Has had two children, normal deliveries. Laceration with the first and a phlebitis. Second delivery, normal. No miscarriages. Menopause began one and a half years ago, very irregular, missed periods for six months sometimes.

The patient looks sallow, pale, and emaciated, and is very nervous.

#### Chief complaints:

1. Uterine hemorrhage began suddenly March 10. Scanty flow since except for two days and then had another hemorrhage, March 28. Had a great deal of pain with first two hemorrhages. Had to be packed to stop hemorrhages, and has been flowing off and on since.

2. Loss of weight, appetite poor, weakness and irritability.

3. Pain in lower right abdomen. Abdomen becoming enlarged a great deal.

Physical examination: Patient wears glasses. Tonsils are present but not diseased. The teeth are in very poor condition; a number of roots present, and there is pyorrhea. The tongue is smooth, and there is moderate atrophy of the papillae but not typical of primary anemia. There are a few râles in the base of the left lung and hypostatic congestion. There is a soft blowing murmur at the apex of the heart not transmitted. The abdomen is distended, and apparently a large cystic fluctuating mass extends to the right anterior of abdomen; tympany to posterior on the left, less on the right; dullness does not shift. Abdomen is not very tender over the mass.

Pelvic examination: uterus enlarged four times its normal size, fixed, and nodular. Small nodule masses in the cervix, and bleeds easily. Incompetent perineum.

Extremities: There is pigmentation of the right tibia from old hemorrhage of varicose veins, varicosity of both legs, bunions of big toes. Reflexes, overactive.

#### Laboratory:

3-20-27. Urine, normal.

4-16-27. Urine shows heavy trace of albumin, loaded with pus.

4-18-27. Albumin plus; clumps of pus.

4-23-27. Albumin plus; loaded with pus cells.

4-27-27. Albumin two plus, 30-50 h. p. f. Pus cells. Occasional blood.

3-29-27. Blood, hemoglobin 58 per cent, declined to 39 per cent on 4-27-27. Leucocyte 7,000, R. B. C., 3,160,000. Bleeding 2' 30," clotting 4'.

4-16-27. Leucocyte 16,500.

4-28-27. Blood Group IV.

X-ray examination: 4-5-27. Transverse colon, hepatic flexure, and ascending colon and cecum are displaced markedly downward and to the left, apparently by smooth mass in right upper quadrant. No areas of obstruction, filling defect nor spasm.

4-6-27. Plates of abdomen shows barium in colon,

same displacement to the left of colon by mass on right side, as noted before.

Pre-operative treatment and progress: The patient progressed satisfactorily for a time, but was always very irritable, nervous, and hard to manage. The pulse and temperature were practically normal. Hypodermics of citrate of iron were given. 4-17-27, temperature 104.0°; pulse 140; patient coughing a great deal and had congestion of lungs with râles. The patient gradually improved, with temperature and pulse about normal so that operation was recommended and local anesthesia advised.

Operation 4-21-27. Gall-bladder normal. There was a large mesenteric cyst between the stomach and transverse colon containing about five or six quarts of thin serous fluid; irregular diverticulæ extending down between the stomach and colon; inner portion of the sac irregular and not uniform. Uterus four times normal, irregular, nodular, and somewhat fixed. Possible carcinoma.

Operation: Removal of the mesenteric cyst. Sac dissected out except the base which was cauterized to destroy the membrane, there being a great many large mesenteric vessels back of this part of the sac. A Penrose drain extended down to the cauterized area.

Progress after the operation was satisfactory for five days, the wound healing and moderate discharge from the cauterized area. A mild form of phlebitis developed in the left leg the fifth day after the operation. The patient became irritable, vomited some, and an involuntary action of the kidneys and bowels began. Pulse 120; temperature 104° ax. Hypodermoclysis, 1,000 c.c. The patient became comatose next day; respirations shallow and rapid. Given blood transfusion of 400 c.c. of citrated blood, 4-29-27. The following day the temperature gradually rose to 106.2°; pulse 140; Cheyne-Stokes respirations, and death at noon 4-30-27.

Important features of this case are the very large mesenteric cyst, perhaps giving gall-stone symptoms, complicated with probable carcinoma of the uterus; pyelitis, and anemia.

Dr. A. Schwyzer (St. Paul) presented the following cases and specimens:

1. Uterus from a woman 55 years old who had complained of some bleeding from the uterus. The cervix was normal. When we curetted for diagnosis we were ready for hysterectomy. The cervix of the normal looking uterus was surprisingly easily dilated to No. 12 Hegar. This was suspicious. Instead of using a curette we entered the uterus carefully with a probang which brought material to light which made the diagnosis of carcinoma plain. Vaginal hysterectomy was done. This did not necessitate changing of the position of the patient, and allowed of a very clean removal of the uterus. A phenol-camphor gauze was pushed into the cervix and the uterus freed all around. The corpus uteri was presenting well in the posterior opening, but it was so soft that we did not dare to grasp it with forceps. This was fortunate as the carcinoma had gone practically to the very peritoneum. I show you the specimen for the only reason to illustrate how far advanced a carcinoma of the corpus uteri may be when the patient has no other signs than a very little bloody discharge, and further to emphasize

the value in these cases of the vaginal procedure, from which many of us seem to have drifted away.

2. Specimen of uterus with multiple fibroids removed by the vaginal route. The uterus with its many fibroids is quite large, as you see; but its removal per vagina did not give abnormally much trouble. The condition of these patients after the operation was as good as after a simple trachelorrhaphy.

3. The sack, or, if you choose, the travelling bag in which I brought you these two large uteri, is the skin we removed in an enormous post-operative abdominal hernia. The woman, 67 years old, had suffered from this hernia for ten years. Usually when we operate for such a hernia we remove as little of the covering skin as we well can. Nevertheless, this large bag had to come away. There was a decubitus ulcer on the posterior surface. The hernia reached more than half way to the knees. The contents consisted of small and large intestines, which were intimately adherent to the sack. In all there would have been about three feet of adherent gut if the different loops had been in one piece. Much of these adhesions had to be divided with the knife and at one place the small gut was opened, but of course sutured at once. A running catgut suture united what could be made out of peritoneum; then double looped 40-day catgut imbricated and the fascia and fine linen between made a firm closure of the fascia. A fine linen closed the skin. Seventeen days later we operated on this patient again for a complete inversion of the vagina, which also dated back about ten years. There was no uterus or cervix, but the bladder was completely inverted outward. The urethra ran directly downward from the meatus, and there was no posterior vaginal recess left as one usually sees in total prolapsus. The pouch contained intestines. After an extensive anterior colporrhaphy, which reached the apex of the protrusion, the same was done on the posterior wall, reducing the lumen of the vagina to about the size of a lead pencil. Both operations were done with local anesthesia. The patient is ready to leave the hospital.

4. The last case I wish to report, was a mesenteric cyst in a woman 80 years old. She came from California with the diagnosis of a tumor of doubtful origin in the right side of the abdomen (so far as she knew). She brought a number of excellent skiagrams, which let us outline the mass as a rounded shadow of the size of a large grapefruit, directly below the right lobe of the liver. The kidney shadow is seen as superimposed in the inner portion of the tumor shadow. A pyelogram identifies it. The stomach is shown on other pictures to fill well; the duodenum, however, gives a narrow shadow as though compressed and pushed upward. The shadow of the ascending colon is to the outer side of the tumor. On palpation the large mass was surprisingly well movable laterally, but could not be moved up and down. It appeared fixed only at the upper pole where it seemed to have its pivot. As it was not particularly tender and on account of its only point of fixation under the liver we thought it was an enormous hydrops of the gall-bladder, though we had never seen one of such proportions.

Though the patient was eighty years old we decided on operation, which was done yesterday under local anesthesia. She is in rather good con-

dition this evening. Her symptoms date back three years and consisted of stomach distress. She had particularly much nausea the last two years, and the last two months it had become terrible, as she expresses it. She could hardly eat anything. No colic; bowels constipated. She comes from a long-lived family.

When the abdomen was opened no gall-bladder could be seen; only fatty peritoneum presented, and the tumor was felt underneath. We divided the peritoneal covering over the mass above the hepatic flexure. Only gradually did we recognize the topography. The tumor was yellowish and exceedingly thin-walled. Soon here and there a minute opening would let fluid escape, though we were very anxious to avoid emptying the sac before we had it peeled out, as the peeling out seemed to proceed best with the cyst at least partly filled. The walls were as thin as tissue paper; they looked necrotic but were not, as they were resistant enough to allow us to get the whole sac out with only about half of the fluid lost. This fluid was thin, turbid, and yellowish, which was due to a great admixture of cholesterolin. The wall, being so very thin, let the turbid yellowish fluid shine through and this gave it the necrotic appearance.

Only a few ligatures were necessary and the abdomen was closed. The operation was done under local anesthesia; there was neither pain nor any untoward sign. Today, twenty-four hours after the operation, we had the patient out of bed to guard against lung trouble.

The location of the cyst was under the peritoneum below the pylorus and the first portion of the duodenum. The largest vessels were encountered at the pylorus which was riding on the upper pole of the mass. After the removal of this mesenteric lymphatic cyst it could be seen that the area of the foramen of Winslow was lifted forward and that the origin of the growth was probably in the very root of the mesentery at the pancreas.

#### DISCUSSION

DR. A. E. BENJAMIN (Minneapolis): I should like to say something about vaginal hysterectomy. I am glad to hear Dr. Schwyzer say that he likes the vaginal hysterectomy. I think I do 60 per cent of these operations per vagina and nearly all with local anesthesia. They do well except sometimes in cases where you have a number of adhesions and perhaps remove a large tumor and have to split the uterus and take it out in pieces. I have favored this operation even for carcinoma, and I think I have had better results; and by following the operation with deep x-ray and radium, one can do quite satisfactory work.

Now about the mesenteric cyst. We had all these problems to consider: Was it hydronephrosis, gall-bladder disease, or ovarian cyst? We first considered mesenteric cyst, and secondly ovarian cyst, but could not get an x-ray of the kidney and were not able to go through all the finer details of examination on account of the unwillingness of the patient. She did not vomit after the operation for five days.

The meeting adjourned.

CARL B. DRAKE, M.D.

Secretary



# THE JOURNAL-LANCET

Represents the Medical Profession of  
Minnesota, North Dakota, South Dakota and Montana  
The Official Journal of the  
North Dakota and South Dakota State Medical Associations  
The Hennepin County Medical Society  
The Soo Railway Surgical Association  
and The Sioux Valley Medical Association

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AUGUST 15, 1927

## THE HEART ASSOCIATION

A few Minnesota men have joined with others to form a national heart association, and an endeavor is being made to make the Minnesota Heart Association a part of the Minnesota State Medical Association. Undoubtedly this will not only attract a great many men who are interested in such subjects but will create more of an interest in heart disease,—a most difficult problem, for it is pretty well admitted that our old hearts stand by us about as well as anything we possess. They endure a tremendous amount of grief, and lost beats and still wear on. If the internists were willing to describe some unusual cases, their descriptions would seem almost incredible. We have the case of a man who normally has an apex beat between the sternum and the nipple, whose heart becomes disorganized and enlarged and hypertrophied, twisted upon itself with a terminal apex beat in the middle of the left back of chest, and still the man lives on, walking around, working, and accomplishing something—certainly with some amount of discomfort, but still able to navigate. Yet the statistician tells us that heart disease is on the increase. Probably so it is. In spite of the large number of deaths from heart disease of all kinds the old heart in the majority of us beats on.

At the last meeting of the A. M. A. two or

three papers were read on the heart which were extremely interesting. One of them "The Drug Treatment of Heart Disease," by Dr. Robert Levy and Dr. Thomas T. Mackie, opens with the statement that it is much easier to write upon a disease than upon a remedy. The former is in the hands of nature, and a faithful observer with an eye of tolerable judgment cannot fail to delineate a likeness; the latter will be subject to the whims, the inaccuracies, and the blunders of mankind. True, there is many a man who has a heart that is functionally disordered, perhaps nervously disordered, and there is a hesitancy in the mechanism higher up which leads to the suspicion that the heart itself is the principal organ involved. But this is not always true. There are some people who listen to a heart, finding a murmur of some kind (what kind seems a matter of indifference), and when the patient is casually told that he has some trouble with his heart he immediately goes into all sorts of diverse imaginary and suspicious tracts and is more or less permanently frightened. Hence one should be extremely cautious about telling people they have heart disease unless everything else is eliminated as a possible condition which might give rise to disorder of the heart. We must all remember that people are extremely susceptible to suggestions that they have heart disease. Sometimes it is the most difficult suggestion there is to remove. A great many people under those trying circumstances go from doctor to doctor only to be met with a different opinion and frequently without anything being done to relieve the unconscious suggestions of the mind.

A large number of people have murmurs and skipping heart beats and irregularities, sometimes a loss of muscle tone, and, following an infectious disease of some kind, may have a very substantial evidence of loss of muscle power in the heart. These situations ought to be definitely realized and explained. We know perfectly well that murmurs which are found very commonly are often a symptom of a symptomatic complex, that is, they are not due to any trouble in the heart at all. It may be the patient is anemic or sick in some other way, or perhaps has not sufficient blood that is rich enough in color or quantity to nourish the heart itself. Irregularities in heart beat are extremely common, particularly so among nervous people, yet very often the physician creates a good deal of domestic unhappiness by announcing that the heart skips, does not beat regularly, and this impression creates a household disaster. We all know there are hundreds of thousands of people going about

perfectly well whose hearts skip occasionally or sometimes very frequently. It is found in people who are in bed a good deal. It is found in altitudes that ordinarily would not distress the patient at all. It may continue as purely a nervous condition over a long period of years without harm.

Loss in muscle tone is perhaps much more important than any other sound, even valvular disorders or anemic or organic murmurs. When we take into consideration the history of the individual, the family history, too, and count up the number of people who have been suffering from heart troubles, we are often able to say to the individual that his condition indicates he needs rest, more nourishment, and graduated exercise, not only for body muscle but for his heart muscle. And much to the surprise of the patient and the pleasure of the adviser it is found that these remedial measures are quite sufficient to restore the muscle tone to its normal sound. However, when the patients have an infection somewhere in their body, beginning with the teeth, tonsils, abdomen and other points, such as may occur in acute febrile disturbances, there is an actual loss of muscle power. Yet to condemn an individual of this kind to a chronic heart disease seems almost wicked, because so much can be accomplished by the removal of the sources of infection and the proper care of the individual.

Very naturally, or perhaps unnaturally, the average doctor turns to the best known remedy for heart disease and sometimes gives it without discriminating between varieties. That drug is digitalis. We have learned much more about the use of digitalis in the last few years than ever before, and our preparations of digitalis are much better standardized. We still hear of the doctor who uses the infusion, but on the whole it has fallen into disuse unless one is sure of the digitalis leaf and makes a fresh infusion daily. Digitalis is said to cause an increase in the amplitude of ventricular contraction by direct action on the heart muscle. This has been amply demonstrated in all sorts of experiments and in typical cardiac cases. But it should be used with reasonable care and followed up until the conditions are stabilized. One can find now in almost any drug-store a standard preparation of digitalis, and in experimental cases sometimes it is found to increase tonic and diminish dilatation. So far this has been found to be the condition in normal dogs, but these effects have not yet been demonstrated in the diseased human

heart. It stimulates the vagus center and sometimes changes the auriculoventricular conduction. It seems quite evident that most of the effect of digitalis is devoted to stimulation of the pneumogastric nerve. The blood pressure under digitalis is inconstant and variable, and the diuretic effect is due entirely to improved renal circulation rather than to stimulation of the kidney epithelium. Used with care and in selected cases it is of inestimable value. It is often found that there are many conditions that it might improve, but just how it acts no one is prepared to assert.

It is stated by the writers referred to above that the chemistry of the digitalis bodies is still shrouded in obscurity, and it is found that it is necessary to resort to biologic standardizations; and these may be found, at least the promises are made by the pharmaceutical houses that they have reached a perfect digitalis product. Digitalis is best given by mouth. When used hypodermically it is very uncertain in its action. The oral administration is safe and efficacious, and if sufficiently large doses are given the beginning effect on the heart may be obtained in from two to five hours, and the maximal effect in from six to twelve hours.

#### DR. LEONARD WOOD

Dr. Leonard Wood was born in 1860, and he graduated in 1884 from the Harvard University Medical School. He went into the army service very soon and was finally retired as a Major General. However, he was one of the active friends of President Theodore Roosevelt and therefore was active with him as a Rough-Rider and was a man willing and eager and ready to do anything that was possible—a man of the tactical and strategic type. He was in charge of the Cuban Revolution and was ultimately sent to the Philippines by President Harding six years ago. He was very eager to get into the World War, but some time in the early 1900's he was operated on for a brain tumor and for that reason rather than for any political reason on the part of President Wilson it was thought best not to assume any extreme risk and send him overseas, with the result that General Pershing became the commanding officer,—a position for which Leonard Wood was eminently fitted. The removal of the growth, whatever it was, was apparently successful. At all events, it did not prevent him from carrying on his activities for a number of years, and until within a reasonably short time he was able to carry on his duties as Major General in the Philippines. The Philip-



pinus prospered under his command and only when he reached a point in his illness when he was operated for hernia was he incapacitated for any length of time. Probably for some time, although we have no authentic account of that, he was warned that his old trouble in the region of his brain tumor was returning, and in an interview the other day Dr. Alexander Lambert, before Major Wood was operated on by Harvey Cushing, issued a statement in which he said that at the time of the first operation they felt quite sure there would ultimately be a recurrence of the growth. Perhaps it was on that testimony, or on testimony of similar import, it was decided not to risk his life by sending him abroad, although in all probability he would much rather have gone abroad and died on the firing line than not. On Saturday, August 6, 1927, he was operated on at the Peter Bent Brigham Hospital, and he evidently did not come out from under the effect of the operation, for he died early Sunday, the following day.

This leads us to a speculation as to how many brain tumors are cured by operation, how many of these patients are temporarily relieved, and how many die from the effect of the operation or a speedy recurrence of the growth. This again leads to another speculation, and that is the character of the growth, of which we at present know nothing. But it is interesting to note that in the last volume of *International Clinics* a table is given under the head of intracranial tumors selected from 1,000 verified cases under Dr. Cushing, and he makes a very strong point in that gliomas are found in 42 per cent of brain-tumor cases, adenomas in 21 per cent, and meningiomas in 11 per cent. Other types of tumors, such as neurinomas, congenital (which are suprasellar cysts, cholesteatomas, etc.), granulomas, papillomas, and angiomas run from 8 per cent to 1 per cent of the cases. Consequently the gliomas offer the wide and productive field for the study and treatment and leads to the early histogenesis of the central nervous system, in which there are described two types of cells in the epithelium of the neural tube. The germinal cells, which are in mitosis, give rise to neuroblasts. The resting or indifferent epithelial cells become transformed into primitive spongioblasts by amitotic division. The latter cells give rise to neuroglia cells or to ependymal cells. It is, therefore, probable that in many of the tumors which we meet there are not many that are always recognized, although, of course, there are all sorts of other tumors aside from these men-

tioned. It is quite probable that many of these tumors, and particularly the gliomas, have been settled by the embryonic growth; that is, there are certain children who, in young life or adult life, are destined to have a brain tumor. As has been said before, the most common variety and sometimes the most difficult to diagnose are the gliomas. Naturally they are of a more or less infiltrated type and equally difficult to remove except in especially well selected cases. These gliomas may occupy almost any portion of the brain. They may produce focal symptoms because the protrusion of the spreading glioma arrives at a destination that is comparatively easy to differentiate, but upon operation the disease is found to be extremely widespread, and not infrequently cases are reported in which the infiltration of the white substance of the brain may extend to all sections and yet not be recognized as a widespread disease. Hence they are confusing and difficult; yet we hear of them being operated on, some of them removed in part, but inevitably the probabilities are that the glioma will continue to spread until it causes death. Very often relief is obtained by decompression without any idea of a removal of the tumor.

The meningiomata are an interesting group of cases and constitute, as has been said before, 11 per cent of intracranial tumors. This tumor is known by a variety of names such as epithelial cancer of the meninges, sarcoma of the dura mater, alveolar sarcoma, and endothelioma. The term "meningioma" as applied by Cushing is simple and indicates the origin of the tumor. It is quite well proven that these tumors arise from islands of the endothelial cells, which may be found between layers of the dura. They are of arachnoid origin and are related to the arachnoid villa. These cell groups increase with age in practically all individuals. They are found along the large dural sinuses, over the poles of the temporal lobes and in the region of the gasserian ganglion; consequently they may involve the bones of the skull, and it is stated, I think, that there was evidence of extension to the cranial bones in Leonard Wood's case. His pictures, taken when he arrived at the Black Hills to visit President Coolidge, show that he was a sick man; that he had great difficulty in getting off the train, that he was lame on one side of his body, corresponding to the location of the old growth of seventeen years ago. So that he illustrates what we must all consider when we make a diagnosis of brain tumor. We must consider not only our diagnosis as to its actual locality, and

the prognosis, which is more or less doubtful in all brain tumor cases except those that are encapsulated, but that in the majority of these tumor cases a return is quite likely. We think all of us could tell of a number of experiences we have had in what we thought was a cure in operation, forgetting that sufficient time had not elapsed to demonstrate the truth or falsity of our opinion. In one instance that comes to us, we made a diagnosis of a cerebellar tumor; it was operated on and found at the bulb of the cerebellum, but the boy lived one month following his operation and then died. At autopsy sixty brain tumors were found that had not been localized.

### MISCELLANY

#### DR. JOSEPH HOWARD SMITH—AN APPRECIATION

Dr. Joseph Howard Smith was born in Macomb County, Michigan, in the year 1843. He was the son of Moses R. Smith and Miranda Howard Smith. His father was a native of Vermont and his mother of Lynn, Massachusetts.

He died at the Battle Mountain Sanitarium, at Hot Springs, S. D., May 20, 1927, where he had been for the past year.

Dr. Smith acquired his early education in the public schools of Michigan, and from that state he enlisted for service in the Civil War at the age of eighteen years. He joined Company K, Second Michigan Cavalry. A year later he was thrown from his horse and was so injured that he was sent home with no hope for his recovery. He regained his health, however, and in January, 1864, he re-enlisted in Company A, Ninth Michigan Infantry, serving until September 15, 1865, when he was honorably discharged.

After the war, Dr. Smith returned to Michigan, and later entered Hahnemann College of Medicine at Chicago, and was graduated March 1, 1868. He practiced medicine at Lowell, Michigan, for ten years, later moving to Pontiac, Michigan.

In 1882 he moved to Groton, S. D., where he practiced until he moved to Huron, S. D., in 1898.

Dr. Smith was the oldest Homeopathic physician in South Dakota in point of years of practice, as he had been continuously in practice for about fifty-five years.

He was a member and a past president of the State Homeopathic Medical Society, Medical Director for the South Dakota Department of the Grand Army of the Republic for some years, the Homeopathic member of the State Board of Health, 1925, and Past Commander of Kilpatrick Post No. 4, G. A. R.

Dr. Smith was united in marriage to Ruby A. Robinson, of Kent County, Michigan, and from this union were born two children, Carl Smith, of Huron, S. D., and Mrs. J. C. Jamieson, of Aberdeen, S. D.

He was held in high honor and esteem by all who knew him, and was an able physician and a courteous gentleman.

Burial services were held at the Methodist Church, Huron, S.D. The Rev. C. B. Harold officiated and burial was made in Riverside cemetery beside his wife, who preceded him in death six years ago.

J. F. D. COOK, M.D.

Secretary S. D. State Medical Association

### NEWS ITEMS

Dr. O. J. Engstrand has moved from Bemidji to Warren.

Dr. H. H. Aldrich has moved from Hitchcock, S. D., to Roscoe, S. D.

The Inter-State Hay Fever Association will meet in Duluth on August 27.

Dr. A. G. Noble, formerly of Howard, S. D., has located in McMinville, Oregon.

Dr. G. H. Luedtke, of Fairmont, has been appointed coroner of Martin County.

Dr. T. L. Birnberg, of St. Paul, has returned from a three months' trip to Europe.

Dr. Charles Reichelderfer, a recent graduate of Northwestern, has located in Long Prairie.

Dr. Frank V. Willhite, of Redfield, S. D., was married last month to Miss Mabel Higgs, of Canton.

Dr. J. H. Hoskins, formerly of Rolla, N. D., has joined the Clinic of Drs. Roan and Strauss, of Bismarck, N. D.

The State examination for Minnesota nurses will be held in St. Paul, Duluth, Crookston, and Rochester on September 1-3.

Dr. H. D. Diesner, of Minneapolis, has returned from a three months trip to Europe. His time was spent mainly in Vienna.

Dr. Carl L. Larsen, of St. Paul, has returned from Europe where he has been for two months on the Inter-State Post Graduate Assembly Tour.

Contracts have been let for the construction of a clinic building for Drs. Cameron, Carr (Andrew and A. M.), and Sorenson, of Minot, N. D.

Dr. Iver Sivertsen, of Minneapolis, has returned from Europe where he has been on the tour with the Inter-State Post Graduate Assembly.

Dr. W. B. Heagerty has moved from Fari-bault to Fort Defiance, Arizona, where he becomes a member of the staff of the Hospital of the Good Shepherd.



Dr. G. J. Ferreria, of Aurora, has been appointed Health Officer of St. Louis County to succeed the late Dr. Lampson, of Duluth. The salary of the office is \$4,500.

A medical telephone exchange and nurses' directory, to be kept open day and night, has been established in Sioux Falls, S. D. The physicians of the city promise it support.

Representatives of the A. M. A. were in Minneapolis last month to inspect the new auditorium in which the 1928 Session of the Association will be held. They pronounced it excellent and predicted a great meeting.

Dr. George H. Simon, of St. Paul, died on August 6, at the age of 44. Dr. Simon graduated from the Northwestern University Medical School, class of '09, and at once began practice in St. Paul, where he practiced until he died.

Dr. George F. Pugh, of Florence, S. D., was drowned on August 7. He died at the age of 66. Dr. Pugh graduated at the college of Medicine of the University of Nebraska in the class of '98 and began practice in Florence in 1913.

The President of the Park Board of Minneapolis has recommended that physicians be permitted to have the privilege of using a special mark upon their cars which will give them certain privileges on the streets when upon urgent calls.

Dr. Donald D. Raber, of Lead, S. D., died on July 21. Dr. Raber was a graduate of Creighton Medical College, class of '06, and had practiced in Tilden and Omaha, Neb. He had been on the staff of the Homestake Hospital for two years previous to his death.

Dr. James M. Murdock has been appointed Superintendent of the Minnesota School for Feeble-Minded at Faribault, to succeed G. A. Hanna, resigned. Dr. Murdock will bring to his work unusual qualifications and experience. He is a graduate of Yale and of the Pittsburg School of Medicine and has studied extensively abroad.

Dr. James A. Rankin, formerly of Jamestown, N. D., died in Los Angeles, California, on August 9, at the age of 70. Dr. Rankin was President of the North Dakota State Medical Association in 1905 and Treasurer of the Association for nine terms. Further notice of Dr. Rankin's work will appear in a later issue of THE JOURNAL-LANCET.

Dr. Edward Boeckmann, of St. Paul, died on

the 22d inst., at the age of 78. Dr. Boeckmann was a graduate of the University of Oslo, Norway. He came to St. Paul in 1887, and at once took a high place in the medical profession and enjoyed a large practice. He early devised a method of preparing catgut for suture material, and gave the method to the Ramsey County Medical Society, and the proceeds of its sale have been added to the Library Fund of the Society. Dr. Boeckmann was a noted ophthalmologist.

Dr. W. B. Roberts, of Minneapolis, writes THE LANCET from Vienna that the members of the American Medical Association of Vienna were in the midst of the recent riots in that city caused by communists who were ostensibly displeased with the Courts. A few people were killed and many were wounded near the headquarters of the American Association, and two American doctors were hurt. Dr. Roberts speaks highly of the work laid out for visiting physicians in Vienna. He goes to London this month and returns home in October.

In accordance with the law passed at the last meeting of the Minnesota Legislature, every physician who wishes to retain his license to practice in Minnesota must secure a certificate from the Board of Examiners in the Basic Sciences before October the first, 1927. The Secretary of this Board is Dr. E. T. Bell, 110 Anatomy Building, University of Minnesota Campus, Minneapolis, Minnesota. Application blanks have been sent to all physicians whose names appear in the directory of the American Medical Association as residing in Minnesota.

#### The Northwestern District Medical Society of North Dakota

A regular monthly meeting was held July 27, at the Saint Joseph's Hospital, in Minot. Following a six o'clock dinner, the following clinical program was presented:

Dr. McCannel—A case of peanut in the right main bronchus, treated by bronchoscopy.

Dr. Cameron—A case of primary peritonitis.

ANDREW SINAMARK, M.D.

Secretary

#### The Stutsman County Medical Society of North Dakota

The last meeting of the Stutsman County Medical Society was held at Trinity Hospital, at Jamestown, N. D., last month.

Dinner was served by the Hospital. Following the dinner Dr. A. L. Cameron, of Minot, read a paper on "Ureteral Stricture," and then reported several cases with plates of the specimens removed at operation. Dr. Lloyd Musburger (D.D.S.) read a paper on "Vincent's Infection of the Mouth."

The following members were present: Drs. W. C.

Nolte, D. W. Johnson, Joseph Sorkness, H. M. Berg, W. A. Gerrish, H. K. Wink, F. O. Woodward, of Jamestown; Dr. C. P. Buzzell, of Cleveland; Dr. G. D. Todd, of Medina; Dr. W. E. Longstreth, of Kensal; Dr. G. S. Carpenter, of Pingree. Drs. Katerman, Musburger, and Cameron were present as guests.

H. M. BERG, M.D.  
Secretary

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#### Physiotherapy Position Wanted

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## REPORT OF A YEAR'S ACTIVITIES OF GLEN LAKE SANATORIUM\*

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OAK TERRACE, MINNESOTA

As Superintendent of the Glen Lake Sanatorium I take great pleasure in welcoming you this evening. This is the second meeting of the Hennepin County Medical Society to be held at the Sanatorium, but the first of the Women's Auxiliary. To the Hennepin County Medical Society for its loyal support and encouragement during our period of growth and development the Sanatorium owes a great deal. To the Auxiliary, which has in the past year so generously supplied the Sanatorium with phonographs, a piano, which we are using this evening, and gifts for over one hundred Christmas packages, we are equally indebted.

We at the Sanatorium sincerely hope that both organizations will enjoy themselves so much this evening that the meeting at the Sanatorium will become an annual event.

Those present last year were told something about the developmental problems of the Sanatorium and of its scientific work. This year I shall only mention that phase of the problem and shall discuss more fully some of the administrative difficulties, as well as the question of the future. This will, I hope, give you a better understanding of its aims, its problems, and its plan. Only in that way can the Sanatorium hope to continue to receive your support and co-operation.

The aim of the Sanatorium Commission has been to provide a place where the tuberculous of Hennepin County may receive treatment for their disease; to provide treatment of a character that they will have confidence in the Sanatorium and to carry on some research work in tuberculosis.

As you know, the Sanatorium is organized under the 1913 Minnesota Sanatorium Law, and is maintained by the tax-payers of Hennepin County and the State of Minnesota. The State pays 71 cents per day for each free case. The law specifies that any person who has been a resident of the state of Minnesota for one year may make application for care and treatment in any county sanatorium in the state, but that preference must be given to the residents of the sanatorium district. That means that Glen Lake Sanatorium can admit residents from other counties only after it has cared for all the residents of Hennepin County who apply. It has always had a waiting list, and for the last year this list has averaged about 50; to-day it is 54 net. Thus you see that aside from emergency cases with a public-health aspect, it is impossible to admit any but county residents. As physicians of Hennepin County you can help us greatly in excluding non-residents by refusing to make application for any but bona fide residents of the county. This will tend to reduce the number of non-resident cases to a minimum, and will

\*Presented at a joint meeting of the Hennepin County Medical Society and the Women's Auxiliary held at Glen Lake Sanatorium, November 1, 1926.

automatically make it easier to secure admission for your worthy cases.

The law clearly states that while this is a public institution supported by taxation where no one is denied treatment because of lack of funds, still it is not a free institution because those who can pay shall do so. The Hennepin County Sanatorium Commission has ruled that the rates for residents of Hennepin County shall vary from a minimum of nothing to a maximum of \$21.00 per week, depending solely upon the financial status of the family. The rate can be justly determined only when the prospective patient gives us full information concerning his economic standing. Will you not explain this financial arrangement to your patients when making application for admittance to Glen Lake Sanatorium, stressing the fact that the patient is to pay according to his ability to do so, even if it is only the cost of his food.

*Types of cases admitted and institutional facilities needed.*—The types of cases admitted to any institution will have a marked influence upon the institutional facilities needed. Table I represents the types of cases admitted to Glen Lake Sanatorium from July 1, 1925 to July 1, 1926. Table II represents the types of cases discharged from Glen Lake Sanatorium during the year 1925 as compared with the cases discharged from various institutions throughout the United States.

TABLE I

Glen Lake Sanatorium types of cases admitted July, 1925, to July, 1926.

Type of Case	Number	Per Cent
Pulmonary:		
Far advanced	264	56%
Moderately advanced	106	23%
Incipient	15	3%
Surgical	21	5%
Juvenile	16	3%
Diagnosis deferred	36	8%
Non-tuberculous	8	2%
Total	466	100%

The 36 deferred cases have been diagnosed as follows:

Tuberculous	15 cases	42%
Non-tuberculous	17 cases	47%
Indeterminate and undiagnosed	4 cases	11%

TABLE II

TYPES OF CASES PATIENTS DISCHARGED DURING 1925

Condition	206 Institutions	Glen Lake Sanatorium
All cases	Number Percentage	Number Percentage
Tuberculous	45,080 88%	367 89 1/4%
Non-tuberculous	6,003 11%	40 10%
Doubtful	747 1%	2 1/2 of 1%
Total	51,830 100%	409 100%
Tuberculous Cases	189 Institutions	Glen Lake Sanatorium
Pulmonary	36,842 95%	318 87%
Extra pulmonary	2,270 5%	49 13%
Total	39,112 100%	367 100%
Pulmonary Cases	176 Institutions	Glen Lake Sanatorium
Incipient	5,567 16%	28 9%
Moderately adv.	11,664 34%	96 30%
Far advanced	17,455 50%	194 61%
Total	34,686 100%	318 100%

A study of these tables indicates that over three-fourths of the cases admitted or discharged are of the type which need bed-side care. It is obvious then that the hospital-cottage plan of construction is far better adapted to the needs of a sanatorium caring for such patients than would the cottage plan alone. The advantage of the hospital-cottage type of construction and of a resident staff with a consulting staff representing the various branches of medicine is further emphasized by the following quotation from a recent paper by Dr. Lyman, of Wallingford, Conn., one of the past-presidents of the National Tuberculosis Association.

"The great defect in our medical treatment of tuberculosis to-day lies in the fact that those responsible for the construction and maintenance of our institutions have not grasped the fact that from the standpoint of the medical and nursing care, and for the provision of a thorough clinical study of the cases, that the equipment and service of our sanatoria should resemble that of our best general hospitals and not merely a first-class boarding home. The treatment to be effective should deal not with the lungs alone but with the entire patient."

*Length of stay.*—The Legislature very wisely did not limit the length of time a patient may remain in any of the county sanatoria. Tuberculosis is a chronic disease, and it must be apparent to all that if sanatorium treatment is to be of any value it should be carried on over a fairly long period of time. One might even say that the effectiveness of sanatorium treatment can be measured by the length of stay of the patient. Table No. III gives the average length of stay of patients in 160 sanatoria in the United States, as prepared by Mr. Drolet, compared with the length of stay of patients in Glen Lake Sanatorium. It also compares the length of stay in Glen Lake Sanatorium with that of a near-by institution caring for patients of a city about the size of Minneapolis.

TABLE III

LENGTH OF STAY—1925

Length of Stay	160 Institutions	Glen Lake
Less than 3 months	40%	30%
Less than 1 month	17%	10%
From 1-3 months	24%	20%
From 3-6 months	22%	20%
From 6-9 months	16%	15%
9 months and over	21%	35%

LENGTH OF STAY—1924

Length of Stay	A large institution serving community about the size of Minneapolis.	Glen Lake
Less than 3 month	32%	35%
From 3-6 months	33%	19%
From 6-12 months	24%	12%
12 months and over	8%	32%
Average for all cases	7 months	10 1/4 months



	Left	Against	Advice
Cases staying less than 6 mo.	89%		66%
Cases staying more than 6 mo.	68%		25%

In commenting upon the length of stay of patients in the 160 sanatoria, Drolet reported that "in five large hospitals in different parts of the country it was found that 24 per cent of all the patients have remained less than one month, whereas five sanatoria have lost only 7 per cent of their patients in the same period. Frankly, the lesson should be understood. Attractive, well-managed, successful sanatoria are preferred. Business plants consider unnecessary turnover as a wastage on the investment. Why should not the same attitude be taken in the management of institutions which frequently represent great sums of public money, and which deal in human lives? Why accept any lower standards here than for common business projects?"

"Are tuberculosis institutions to be only for educational training, or are they to be for curative treatment? If they are only for the first purpose let them be frankly organized for intensive training in hygiene and correct living; but if they are, as most patients want them to be, for the recovery of lives threatened then let such as have an undue proportion of loss of their honest prospects seriously question and reform their method. For the great investment in tuberculosis institutions at present, and for the large loss of opportunity, it would be frankly better to have a fewer, wasteful, short-term admissions and more real work with patients who stay."

While I agree with Drolet in the main, still I think that the length of stay will be influenced somewhat by the condition of the patient on discharge. Deaths occurring in the first few months of sanatorium life should not be charged against faulty methods used in the sanatorium, nor should the institution be criticized too severely when a fairly large proportion of patients admitted in the hopeless stage decide to leave the

sanatorium and die at home. Something, however, is radically wrong with any institution when a fairly large proportion of those patients who have a good chance for recovery leave against the advice of the institution.

*The value of the sanatorium.*—The value of any sanatorium can be measured directly by its results or what happens to the patients treated there and indirectly by its benefit to the community. It is obvious that its results in turn will be influenced markedly by the types of cases admitted. Table IV compares the condition of the patient discharged from Glen Lake Sanatorium during 1925 with the condition of patients discharged from 184 other institutions in the United States.

TABLE IV  
RESULTS OF TREATMENT—1925

Condition on discharge of all tuberculous cases	184 Institutions No.	Per cent	Glen Lake Sanatorium No.	Per cent
Apparently arrested or arrested	5,544	15%	72	20%
Quiescent or improved	16,153	42%	95	26%
Progressive or unimproved	8,886	23%	60	16%
Died	7,705	20%	140	38%
Totals	38,288	100%	367	100%

Nineteen to 20 per cent of all tuberculous deaths in the United States take place in institutions, according to Mr. Drolet.

Forty per cent of all tuberculous deaths in New York City take place in institutions.

Seventy-three per cent of all tuberculous deaths in Minneapolis take place in institutions.

According to this table 38 per cent of our patients were discharged as dead and another 16 per cent as unimproved, or a total of 54 per cent of all of our patients apparently deriving no benefit from their treatment at the Sanatorium, as compared to 43 per cent for the average of the other institutions. It must be remembered that in making this comparison that some of the other institutions give preference to the early cases while the Minnesota County sanatoria all give preference to the advanced, urgent case.

TABLE V  
GLEN LAKE SANATORIUM  
Detailed Condition on Discharge of Tuberculous Cases for 1925  
Percentage of Cases

Percentage of Cases									Percentage	
Types of Cases	No.	Per cent	Arrested	Apparently Arrested	Quiescent Improved	Unimp.	Dead	Arrested Apparently Arrested Quiescent Improved	Unimproved and Dead	
F. A.	194	53%	½ of 1%	½ of 1%	5%	13%	21%	59%	20%	80%
M. A.	96	26%	11%	10%	24%	18%	17%	20%	63%	37%
Incipient	28	7%	54%	7%	14%	11%	3.5%	10.5%	86%	14%
Surgical	26	7%	42%	4%	15%	23%	4%	11%	85%	15%
Hilum and Juvenile	19	5%	84%	0%	0%	11%	5%	0%	95%	5%

According to Table V there were 363 cases of tuberculosis discharged from Glen Lake Sanatorium during the year 1925. Of these 53 per cent were in the far-advanced pulmonary group, and a study of Table V reveals the fact that 59 per cent of this group died at the Sanatorium and that another 21 per cent left unimproved, or a total of 80 per cent of the far-advanced cases apparently derived no benefit from their treatment at the Sanatorium, while 86 per cent of the early cases were discharged improved. These figures would indicate that caring for the advanced cases does not permit of many cures while caring for the early cases does.

It is apparent, therefore, that if the sanatorium is to give preference to the advanced cases that its greatest value will lie not in what happens to the majority of the patients treated there, but in the benefit the community derives from caring for such types of cases.

No one will deny, however, that the community has derived a great deal of benefit from the fact that even those patients who were discharged unimproved learned something of how to protect themselves, their families, the general public; and, furthermore, the friends who visit the patients at the Sanatorium must have learned something of the true character of tuberculosis, how to protect themselves against it. The Sanatorium has also offered the tuberculous an opportunity to regain their health and, if that is impossible, has given them good humane care during their terminal illness. As stated before, the most important benefit which the community has derived from the Sanatorium is an indirect benefit and lies in the protection it affords the community by acting as a place for the segregation of the foci of infection. The importance of this phase of the sanatorium's activity is shown by the fact that approximately 19 to 20 per cent of all the deaths from tuberculosis in the United States have been estimated to have taken place in sanatoria and that 73 per cent of the deaths of Minneapolis people took place in sanatoria and 38 per cent of those deaths occurred in Glen Lake Sanatorium alone.

No one can justly claim that any sanatorium which cares for the advanced case for several months before death is not rendering a distinct service to the community. According to our records, 70 per cent of those who died at Glen Lake Sanatorium were in residence over three months. I question, however, the benefit to be derived by any one, by the patient, by his family, by the community generally, when the sanatorium cares

for a patient who dies within a week or two, as was the case at Glen Lake. Our records reveal that 13 per cent of the deaths in our advanced cases occurred within two weeks after admission, and two died within two hours. If such cases have been living at home until the time of admission to the Sanatorium what is to be gained by separating them from their families just before death? Certainly, as foci of infection they have been active for a long time, and have probably done all the harm to the other members of the family that they can possibly do. Far better to engage a nurse and care for such cases in their homes rather than send them to any sanatorium or hospital to die. I am not talking now about the homeless individual who has been living in boarding houses and hotels. Such cases should be hospitalized either in the sanatorium or a hospital at once whenever discovered.

In short, if any sanatorium gives preference to the more advanced cases, the community will derive its greatest benefit from the sanatorium in an indirect, intangible result, which, however, will be compounded as the years go by. Removing such a large number of foci of infection from the community must have a very beneficial effect upon the incidence of infection. This will not be apparent at once, but only when the children of the present generation grow to manhood free from the disease called tuberculosis, and thus they, in turn, infect still a smaller number of children. Thus, while the sanatorium is attempting to cure those who are ill with tuberculosis and is acting also as a means of segregation and isolation for the open cases, it is practicing true preventive medicine in its most effective form.

The after mortality or ultimate results are really what count as far as the individual is concerned and these vary, of course, with different institutions.

TABLE VI  
CONDITION IN 1922 OF THE PATIENTS DISCHARGED  
ALIVE FROM THREE SANATORIA IN THE  
YEAR MENTIONED

Year	1916		1917		1918		1919		1920	
	D	A	D	A	D	A	D	A	D	A
G. L. Sana.	64%	36%	41%	59%	49%	51%	26%	74%	29%	71%
Institu. A	75%	25%	67%	33%	55%	45%	62%	38%	41%	59%
Institu. B	83%	17%	70%	30%	80%	20%	61%	39%	53%	47%

Table VI was prepared in 1922 by the Minneapolis Health Department and gives the condition, at that time, in 1922, of patients discharged alive during the years 1916, 1917, 1918, 1919, and 1920 from three sanatoria caring for Minneapolis cases. This table is all the more interesting when one realizes that all of the pa-



tients were practically of the same economic status. "D" means dead, and "A" means alive. All of the cases dying at the various sanatoria were omitted from this table.

The after mortality is also allied with the question of how many beds any community should have for the care of its tuberculous. Some years ago the National Tuberculosis Association was asked to determine the number of beds needed by any community. At that time the sanatorium movement stressed the care of the early case rather than the advanced case. With those conditions in mind the National Association recommended that each community should provide one bed per death. That goal is still the aim of many communities while Hennepin County has already three beds per death.

At present there are about 1,070 beds devoted to the care of tuberculosis in Hennepin County, and there are about 4,100 registered cases in the county. This gives approximately one bed to every four registered cases in the county, and Glen Lake Sanatorium alone has one bed to every 6.3 registered cases. This ratio would even be higher if the soldiers cared for at Thomas and Asbury were excluded. Most communities have one bed to every ten or fifteen cases. According to these figures, Hennepin County now has approximately three times the number of beds usually accepted as the standard for any community. However, the institution is filled and we have a net waiting list of about 54.

After careful consideration of the above facts the Sanatorium Commission decided to take care of the waiting list by opening an Out-Patient Department rather than the construction of additional sanatorium facilities.

This Out-Patient Department was to be more than a dispensary for chest examinations where the patients would receive general advice. It was to be a real attempt at the institution of sanatorium treatment in the home during the time the patient was waiting to enter the Sanatorium, and an attempt to follow such patients upon the discharge from the Sanatorium as have not a personal physician. In carrying this out a determined effort has been made to safeguard the rights and prerogatives of the private physician, admitting as patients to the Out-Patient Department only those individuals who can pass the regulations necessary for admission to the University Dispensary, and the private patients only upon the written request of the physician. Furthermore, every patient who is referred to

the Sanatorium by a physician in his private capacity and not from a dispensary is advised at the time of his discharge to return to his physician. At the same time the physician is notified of the discharge, of the advice given, and is offered the consultation service of the Out-Patient Department without cost to the patient in an effort to enable the patient to carry on the treatment after his return home. Thus, while the Out-Patient Department does not desire to assume entire charge of the case, it is willing to aid the physician, if he desires aid, in his attempt to carry the treatment used at the Sanatorium into the home.

TABLE VII

EMANUEL CHURCH TUBERCULOSIS CLASS AFTER  
CONDITION OF PATIENTS, WITH TUBERCLE  
BACILLI IN THE SPUTUM ON ADMISSION,  
DISCHARGED WITH WAGE-EARNING  
POWER RESTORED

Number of years after discharge	Total number of cases	Number working	Per cent working
1	59	57	97%
2	58	55	95%
3	57	51	89%
4	57	46	81%
5	55	45	82%
6	53	42	79%
7	49	39	80%
8	47	34	72%
9	45	31	69%
10	43	30	67%
11	43	30	70%
12	45	28	65%
13	39	28	72%
14	33	24	72%
15	27	18	67%

CONDITION OF PATIENTS TEN YEARS AFTER THEIR  
DISCHARGE WITH WAGE EARNING  
POWER RESTORED

Stage	Total number	Well	Living	Dead	Per cent well
Incipient	40	34	1	5	81%
M. A.	30	24	1	5	80%
F. A.	14	8	1	5	57%
Total	84	66	3	15*	79%

\*Three of these did not relapse but died of other diseases. One hundred twenty-six of the 208 patients, or 51 per cent, discharged from the Trudeau Sanatorium in 1914 were well after ten years.

Including in our series the three patients who died of other diseases, the percentage of those in whom manifest pulmonary tuberculosis did not recur is increased to 82.

Table VII gives the results of home treatment of tuberculous patients as carried out by Dr. Joseph Pratt, of Boston. This table speaks for itself and needs no argument, and clearly proves that home treatment can be successful even though it is not usually successful. The budget to carry out this type of treatment should permit the alteration of the home so that a sleeping porch or a well-ventilated room is available for the sole use of the patient. It might even have to include a bed, bedding, and a housekeeper as well as nursing and medical supervision. Under the arrangement in the city of Minneapolis the bedside nursing would be given by the Visiting Nurse Association and in the rural part of

Hennepin County the bedside nursing would be given by the County Public Health Nurses. Such a plan contemplates enough salaried physicians to make home visits whenever necessary.

I am very glad to report that during the first year of our Out-Patient Department the consultation service was requested in about 50 per cent of the cases on the waiting list. This is, I think, a very good record and indicates your desire to co-operate with the Sanatorium in its efforts to meet the present situation without the cost of construction of additional beds. Let me assure you that every effort will continue to be made to safeguard your personal rights in carrying out this program. I will admit that mistakes will creep in. They will be honest mistakes of judgment, however, rather than mistakes of intent,

and if called to our attention will be gladly and promptly corrected.

I hope this report tonight will convince you that the Sanatorium merits your continued confidence and loyal support and I wish to assure you that as far as possible it will do everything in its power to co-operate with you in helping you to care for your patients during their illness with tuberculosis.

NOTE:—The tables showing statistics in other institutions than Glen Lake Sanatorium and with the exception of Tables III and VII were obtained from an address, "Tuberculosis Hospitalization in the United States," given at the 22nd annual meeting of the National Tuberculosis Association, Washington, D. C., October 5, 1926, by Mr. G. J. Drolet, Statistician, New York Tuberculosis and Health Association, who kindly loaned me his manuscript for use in the preparation of this paper. Mr. Drolet's article appeared in full in the December, 1926, number of *The American Review of Tuberculosis*.

## PHYSICAL EXAMINATIONS\*

By JOHN M. DODSON, A.M., M.D., Sc.D.

CHICAGO, ILLINOIS

The topic assigned me is one which is now uppermost in the minds of the organized medical profession, and I want to speak to you both as railway surgeons and as general practitioners. I can best lay a background for this particular subject by speaking briefly of the present aspect of medical science and the growing preponderance in possibilities and in use of preventive as distinguished from curative medicine. I do not need to tell you that the remarkable advance of the last sixty years in medical science has yielded practical fruits in the field of prevention much more largely than in the field of cure. We are able at the present time to point out how a large amount of disease can be prevented, and we are preventing a good many diseases. We have greatly reduced the general mortality rate and have very nearly abolished some diseases from the face of the earth. At the same time there is a growing unrest on the part of the medical profession with respect to the present conditions. Those of you who read the medical journals or meet your fellows on occasions like this are aware of this fact, although amongst such prosperous gentlemen as I see here it is not perhaps so loudly voiced as among those less fortunate. It is true, however, that the family doctor is

finding it more and more difficult to get along financially; indeed, some of our writers tell us that the family doctor is soon to be a thing of the past, a statement with which I am sure very few of us would agree. It is true, however, that the sort of practice that was common in my early days, and especially in the days of my father and your predecessors, has lessened very materially. In the first place, disease is less prevalent. Some of you can remember when you could count with certainty in the autumn on a definite percentage of cases of typhoid fever that formed a source of revenue to the family doctor. Typhoid fever is practically wiped out. Infant mortality has enormously lessened. My good father could predict almost to a certainty, when the diarrhea and cholera infantum cases were going to begin, and for a considerable period during the hot spell and the cooler weather following he was sure to have a large number of such cases. In malarial areas malaria was a constant source of revenue, but now, especially in the South, these areas are rapidly being cleared up.

Then, again, the capacity of the individual physician has been greatly increased by the remarkable growth of hospitals. Most of you do a good part of your work in hospitals, and you are well aware of the fact that you can take care of

\*Presented before the Seventeenth Annual Meeting of the Minneapolis, St. Paul and Sault Ste. Marie Railway Surgical Association, at Chicago, Illinois.



three or four patients with the same expenditure of time and energy as when formerly you took care of one patient in house-to-house visits. The automobile has increased the capacity of the doctor. Also the trained nurse has been a factor, for she does many things, and does them better than could the doctor with his greater responsibilities.

The growth of specialization, of course, has made a great difference, and this growth is, I believe, partly due to the fact that the attention of people has been directed, rather mistakenly to my mind, to the importance of special skill in special lines. Primarily, this is because the doctors are deserting the smaller neighborhoods and villages. The farmers who want a doctor at call only when the baby is in danger of developing colic or the wife is to be confined, are not going to keep the country doctor very long in their community: It is an impossible proposition. To that fact is due the dearth of physicians of which we hear so much, and which, by the way, is very greatly exaggerated. The cults are a source of constant annoyance, but to my mind this factor is of far less importance than is commonly attributed to it. We need worry much less about the growth of the cults than we need to worry about our own shortcomings.

Now, if the profession is to regain generally the confidence of the public, to whatever degree they may have lost it—and I think the loss of confidence and good-will is much exaggerated in certain quarters—if we are to regain this confidence we must give the best we have to offer, and this lies in the prevention of disease, as well as in the cure. It is true that the average individual seeks the doctor for the purpose of finding relief from pain and distress, but if we teach the people of this country that it is much more economical and much better in every way to seek the doctor before the trouble comes and have the modes of living,—eating, working, etc.,—so directed that the individual may avoid the troubles which he is bringing on himself, then we shall have done them a very great service. And this is being brought about by the expansion, the development, and the efficient administration of community and personal hygiene. Community hygiene we need not here discuss. It comprises, of course, the things our health officers do for us along the line of pure water, sewage disposal, quarantine, etc. But community hygiene can never find adequate response on the part of the people unless we have an educated and enlightened public who appreciate the value of preven-

tive measures. The important thing is personal hygiene. Those things which the individual does for himself are far more important and effective in avoiding disease than those things which the community can do for him through health organizations.

How is this education along health lines to be brought about? First, by the individual physician, who must become, in my judgment, the family health adviser to a much greater degree than he is at present. He must be the health adviser as well as the family doctor. He must take the family into his confidence and say to them that it is his province to tell them how to keep well, he to be paid for this advice just as he is paid for his service in curing disease; and also the organized profession in state and county medical societies and through the American Medical Association must co-operate in this work.

Just in a word or two I want to tell you what the A. M. A. is seeking to do through its Bureau of Health and Public Instruction, of which I chance to be the secretary. This Bureau, organized some fifteen years ago as a Council and continuing as such until last June, has for its main purpose the health education of the public. And this, to my mind, is of very great importance. Whatever we may think, whatever we may elect to have done in reference to the public, however keenly we may prefer them to remain ignorant, it is quite out of the question that they continue so: they are going to be educated; they are going to be informed; they are being informed every day, and either we ourselves will impart that information in a way to give a proper statement of the purposes and ideals of the medical profession, or it will be done, as it is largely being done, by other agencies,—social workers, great foundations, and other agencies whose interests are primarily not with the medical profession. I do not mean to say that they are antagonistic, but, primarily, they are not looking out for our interests. This effort on the part of the A. M. A. to educate the public is, of course, made in various ways, but mainly just now through the magazine *Hygeia*, which, it seems to me, ought to have the cordial support of every member of the Association. It is growing and more and more filling a need. I believe that it is serving this purpose in a very efficient way through the means of reprint of articles in this magazine by newspapers and syndicates of newspapers, and through special articles prepared for magazines like *The Woman's World*. Also this matter is being disseminated through the supplying of materials to

help local men in making addresses to lay organizations, such as the Rotary Clubs, Kiwanis Clubs, Chambers of Commerce, etc., but in that regard we are not as well equipped as we hope to be. Radio talks are being given from articles in *Hygeia*, not only in Chicago, but in eight other cities in the United States. The Bureau is also extending the propaganda for health through co-operation with other great national organizations. I wish I had time to tell you of the excellent and interesting piece of work that has been going on for twelve years in co-operation with the National Educational Association with 160,000 members. It is largely due to the work of this joint committee that interest in health topics has grown so enormously in the schools within the last decade. For many years this subject was less efficiently taught by instructors and more despised by the pupils than any other subject in the curriculum. That is no longer the case.

Finally, the Bureau is charged with the task of promoting the periodic examination of apparently healthy persons. This idea that the apparently healthy individual, especially after he has reached a certain age and especially if he is still in business and subject to certain strains, should present himself to a competent physician at stated intervals to be looked over as is the watch, the automobile, or other piece of delicate machinery, is not wholly new. It was proposed many years ago in a small way, but began to be nationally agitated only some ten or fifteen years ago when the insurance companies, realizing the very great advantage to them of having their policy holders keep tab on themselves, entered into an arrangement with certain organizations to have these examinations conducted. Here was another case where the medical profession was asleep—they allowed an outside organization to take up a task which they should have undertaken long before. One need not elaborate on the service which these insurance companies and allied organizations have performed; it has been helpful, but it is not necessary to have any intermediary organization between the physician and the patient in these health examinations. The fault we have to find with such an arrangement is that it is an exploitation of the profession. When such organizations receive \$20 for that examination and pay the doctor \$3 or \$5 for making it, the doctor is not getting his share. The fact that they pass upon the report of the doctor, a thing which he is perfectly able to do himself, is no excuse for collecting that large excess of fee. No! This job is the doctor's

own job, and, conspicuously, the family doctor's job. The dentists beat us to this arrangement very decidedly. Many years ago dentists began to advise members of their clientele that they should come at regular intervals and have their teeth examined; not to wait until the teeth ached and had gone into decay, but to come when the lesion was small and could be easily corrected. To-day it is almost the universal practice for people to bring children and to go themselves for examinations of the teeth, and the effects are very manifest. A little later, in fact quite recently, the infant welfare movement in dispensary practice spread out into private practice, and to-day every man who devotes himself especially to children derives a large part of his income by advising mothers as to what they shall do with perfectly healthy babies that are brought at regular intervals and examined. The diet is prescribed, and the doctor keeps tab on them.

I have spoken of insurance companies. They were an important factor in the beginning, and they are encouraging periodic examinations. More and more industrial organizations are coming to see the necessity of this sort of thing if they are to get the best results. It is very interesting to know that our own "Soo" Line was one of the first railroad companies to take up this matter. As yet examination of railroad employes is not universal, as it should be, but I am satisfied that very soon all railroads, like other great industrial organizations, are going to insist that no man enter their employ who has not been carefully reviewed as to physical fitness by a competent examiner. They cannot afford to do anything else under the workmen's compensation laws. Employes should be re-examined at stated intervals, not for the purpose of refusing employment to the man with a minor defect. That is one thing that has aroused antagonism on the part of labor agencies. The purpose of this examination is not to exclude from employment those men who are at all able to work. Its purpose is to adjust the individual to the task for which he is fitted and to prevent his taking the task for which he is not fitted.

Some three years ago this matter was brought to the attention of the American Medical Association, and a committee was appointed under the old Council to consider it and bring in a report. A year ago last June there was presented a report on the periodic examination of apparently healthy persons, and there was included in the report the preparation of a blank form. This examination blank has been considered with



a great deal of care, and we believe it is now a reasonably satisfactory form of blank for the examinations which the private physician would conduct in his ordinary practice. The report of the committee which discussed this matter in detail is a little pamphlet of fifteen pages. This can be had by application to the A. M. A. It gives briefly the history of and the reason for this movement, and directions for carrying out the examination. This is about to be elaborated into a little more complete report, which we hope will be ready soon.

Two things are essential if this great project is to be successfully put over and become a routine practice:

*First*, the idea has to be sold to the profession, and that is why I hope most of you realize the importance of this movement. There are still many physicians who have been so long concerned with the older type of practice that they do not realize the great and growing factor of examining apparently healthy people. Such complaints as this come, for instance, from Wisconsin: "How can I get my physician to give me a *real* examination?" Nothing will kill this movement quicker than the giving of an inadequate or incomplete examination. It does not make any difference how well you know an individual, how thoroughly healthy he appears to be, if he applies for an examination or if, for that matter, you can coax him to be examined, he wants a thorough, complete, exhaustive going over from top to toe, a procedure which will take three-quarters of an hour to an hour with relatively simple appliances, and he ought to get it and will be willing to pay well for it. We want to wake the profession up to this. I would like to urge upon each one of you that you make it your business to see that the secretary of your county medical society stages an early meeting to discuss periodic examinations of apparently healthy persons, having the matter presented, if possible, by some one from the outside who has had an experience in this matter; if not, then by some member of the organization who will study the subject carefully and prepare himself thoroughly to present it in the right way.

*Second*, the best means I know of for arousing the profession to a realization of the importance of this matter is to try it out on themselves. That is what they did in King's County, N. Y. They staged a large meeting at which three hundred of their members were present, and Dr. Emerson presented the whole subject and discussed it from all angles. Then they held a

second meeting at which ninety-nine members of the organization offered themselves for examination by men who were familiar with the technic. What did they find? Not a single one of these men was found without a defect, and only four or five were found with minor defects needing little attention. The average number of defects found in those 99 physicians was  $3\frac{1}{2}$  per person. Now, when physicians find themselves the subject of physical defects of this sort, it does not need any argument to show them that the members of their clientele and the people about them have similar defects. That is the thing to do. And you gentlemen engaged in railroad work and all men engaged in the industries have a peculiar advantage in this regard because you have a degree of control over considerable groups of individuals whom you can influence effectively. The public needs to be educated, of course, but that education is proceeding much more rapidly than you would suppose. In many places the demand for these examinations is growing so rapidly that it cannot be met.

In my judgment this education primarily belongs to the family doctor. It is just as much his duty to tell the people of his clientele that these examinations are a good and necessary thing, as it is for the dentist to tell his patients that they should have their presumably healthy teeth examined for the purpose of finding out whether or not they are healthy, or for the pediatricist to say to the mother, "You should bring your infant whether you think it needs examination or not, and I will charge you for it."

The organization groups have, I think, solved this question in perhaps the best way. In Maine there has been organized what is called the Maine State Health Association, made up of lay organizations,—the Federation of Women's Clubs, of labor unions, of manufacturers' associations, and others, and these representative, strong people, co-operating with the State Medical Society on the one hand and the Public Health Department on the other, have made this one of their principal activities. A similar movement is going on in Washington, in Minnesota, and here in Illinois a special organization has been formed for the express purpose of putting over these examinations.

Coming down to the final analysis, it is the family doctor himself who is the crux of the whole situation. It rests with him to instruct his patients. You do not have to have a group to do this work. In special cases you may need the help of the oculist or of the rhinologist, or the

otolaryngologist—certain special advice may be needed at times, but for the most part a thorough, careful, exhaustive examination can be made by any competent general practitioner. And he will find in conducting examinations of this sort, where he is not looking for any particular disease, where not focusing his attention on certain obvious symptoms, a training in thoroughness, exactness, and accuracy which he has not had since his student days, even if he had it at that time.

I present this matter for your consideration, and I am sure that, if the profession generally wakes up to the importance of this movement, we shall find the public more than ready to meet us half way, and we can do a service to the people of this country such as has never before been rendered. As stated, I have not time to tell you what the schools are doing along this line, but I can say that in many schools of the country, especially in the cities, our children are being taught in terms of health. They are thinking so effectively that they devise slogans, they can construct ingenious devices to visualize ideas of health. We are bringing up in this country a generation of young people whose attitude towards health and all that pertains to it is radically different from that which has gone before. Young people trained in that way are not going to be cult chasers or fad followers, and they are going to be public health supporters to the limit.

#### DISCUSSION

DR. CARL VON NEUPERT (Stevens Point, Wis.): Since the Workmen's Compensation Act came into effect there is no question but that industrial concerns, aside from the railroad companies, have come to the conclusion that employes should be examined periodically or at least at the time of employment. Those of us who are called upon to make these examinations should, however, not lose sight of the fact that there is a responsibility, not only to the organization for which the examination is made, but also to the men we examine.

If we give these men a somewhat careless or hurried "once over" and fail to note some serious defect which will stand after some years of service in the way of a well-earned promotion, do we not inflict a grave injustice? I had occasion to note several cases like this some years ago when I found men who had been employed for six, seven, or more years as brakemen, were re-examined for promotion to conductor and had to be disqualified on

account of complete color blindness. The fact that they were qualified in the first place was not the fault of the examiner so much as it was due to the system of examination in use at that time, especially as pertaining to the detection of defects of color perception. This should not be taken as a criticism of any one in particular because examinations on all roads at that time were conducted along similar lines, with but a few exceptions so far as I am informed. I had been making examinations for the Wisconsin Central for some years, and when, therefore, I received a re-appointment to examine for the "Soo" Line I had an idea I was well qualified to do this work.

One morning I found waiting in my office a gentleman who informed me that he had come to explain to me how to examine applicants. I felt somewhat that he was wasting a perfectly good day, but it was not very long before I found that he could teach me a lot and how little I really knew about conducting an efficient physical examination of applicants for employment. And I am very grateful to our Chief, Dr. Rishmiller, for showing me how to make better general examinations, which are so much more valuable when properly conducted.

In regard to what the essayist has said with reference to the public health problem; and I hope I may be pardoned for "blowing the horn" in regard to my home city, which is one of the most progressive cities in the state. The last two years a great number of our children of school age have received Schick's test and those found positive have received the immunizing doses of diphtheria toxin. All this was done without cost to the public and under the supervision of the local and state health officers. Furthermore a large number of pupils have also taken advantage of the opportunity offered through the same channels of receiving prophylactic goiter treatment, this having seemed advisable because of the prevalence of a good number of such cases in our community.

Recently, through the efforts of the Kiwanis Club a free Dental Clinic was established in one of the centrally located school buildings and at a cost of approximately two thousand dollars, gotten together by the Club by means of entertainments, etc., up-to-date modern equipment was installed where local dentists examine, free of charge, the teeth of all children and treat those who are unable to pay for such treatment. We also extend a hearty welcome to those physicians who periodically visit the city, being sent out by the Wisconsin Anti-Tuberculosis Association for the purpose of conducting public-health clinics. We know that these men come here to do good, and we endeavor to co-operate with and help them, realizing fully the great amount of good which this Association has accomplished. Living in an era of "preventive medicine," let us therefore not only endeavor to cure the ills of our neighbors, but also teach them how to keep well.



## ANEURISM OF THE ABDOMINAL AORTA\*

BY JACOB FOWLER AVERY, M.D., F.A.C.P.

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This paper has to do with aneurism of the abdominal aorta only. Aneurisms of this type may be large or small, of short duration or exist for months or years. The usual location is near the celiac axis, but it may be anywhere above the bifurcation of the iliacs and is usually of saccular form. Aneurism of the abdominal aorta is a rare disease. The writer has never seen a case before the present one in twenty-seven years of varied practice.

Louis M. Warfield<sup>1</sup> states that not one case of abdominal aneurism was found in the last five hundred autopsies of the Milwaukee County Hospital. Among the admissions to the wards in the last five years not one case was found among 9,584 patients.

Osler,<sup>2</sup> in 1908, states in *Modern Medicine* that among 18,000 admissions to his wards at Johns Hopkins he had only sixteen cases of aneurism of the abdominal aorta. The ratio of abdominal to thoracic aneurism was 1 to 10. Among 2,200 autopsies at Johns Hopkins Hospital there were eleven instances of this type of aneurism.

J. H. Bryant collected data from Guy's Hospital from 1854 to 1900. Among 18,678 necropsies there were 325 cases of aneurism of the aorta of which 54, or 16 per cent, were in the abdominal portion. Males were more frequently attacked than females, only two of Osler's sixteen cases being females. The majority of the patients were young men. In 63 per cent of Bryant's series they were under forty years of age, and in two, the disease began before the twentieth year.

F. Kaufman, of Kulbs' Clinic in Cologne, states that aneurism of the abdominal aorta was rare. Only five cases seen during the five-year period previous to 1921.

E. R. Gernert<sup>3</sup> reports six cases, all negroes, three males, three females, all with positive Wassermanns, with aneurisms of the abdominal aorta. In 1,062 autopsies twenty-eight aneurisms were found, six of which were in the abdominal portion.

Baldwin Lucke and Marion Hague Rea<sup>4</sup> gave a paper treating of 263 aneurisms of the aorta, forty of which were in the abdominal aorta.

Ernst Eskuchen<sup>5</sup> reports eight cases of aneu-

rism of the abdominal aorta in a series of 9,500 autopsies.

*Etiology.*—The underlying cause is usually either syphilis or arteriosclerosis. Aneurisms above the diaphragm are usually syphilitic, while those below the diaphragm are more apt to be arteriosclerotic, but numbers of cases of specific aneurisms of the abdominal aorta have been reported.

*Symptoms.*—These are often very obscure, and in many cases it is not easy to reach a correct diagnosis. I quote from Bryant's analysis of Guy's Hospital statistics: "A correct conclusion during life as to the nature of the disease was arrived at in only eighteen out of fifty-four cases, an analysis showing that an abdominal tumor was detected in thirty-one, pulsation in thirty-five, expansile pulsation in eight cases only, and in twenty-six a systolic murmur. Incorrect diagnoses of a variety of diseases were made, including malignant tumor lying in front of the aorta, renal calculus, lead colic, spinal caries, sarcoma of the kidney, nephritis, perinephritis, pneumothorax, pleuritic effusion, epithelioma of the esophagus, malingering and intestinal obstruction."

In Ernst Eskuchen's series the following symptoms were most frequent; Indefinite pressure in the gastric region, gastro-intestinal pains resembling lead colic, meteorism, backache on the left side radiating into the left testicle and left thigh, retardation of the femoral pulse, a palpable pulsating tumor in the left side of the back or in the abdomen, and intermittent character of the complaints. In four of his cases he succeeded in establishing the diagnosis by x-ray examination, even before the development of definite signs of aneurism.

*Pain.*—The only complaint of pain may be in the back resembling lumbago, or it may be abdominal and of a constant, dull, boring character. There may be paroxysms of great intensity for months. When it ruptures into the retroperitoneal tissues, as it often does, the pain with other symptoms resemble those of the acute abdomen.

Nausea and vomiting may be early and severe, or occasional. Rupture may occur into the stomach, duodenum, or colon, or into the retroperitoneal tissues, which is the most common mode, or pass upward and rupture into the pleura.

\*Presented at the first semiannual meeting of the Minnesota Society of Internal Medicine, at Rochester, Minnesota, November 8, 1926.

A few instructive case reports are inserted.

A. Menter,<sup>6</sup> in the *Munich Medical Journal*, reports the following case:

Patient, aged 66, suddenly had nausea, pain in the abdomen, and distension below the umbilicus, with signs of ileus. Temperature, 37.8° C; pulse, small and frequent; face pale; general examination, negative. In the abdomen a tumor could be felt in the median line, beginning in the epigastrium and extending to below the umbilicus. It was long in shape, smooth, and pulsed synchronously with the radial pulse. The Wassermann was negative. Operation was performed, but the patient died forty-eight hours later. A large saccular aneurism was found in the lower abdominal aorta which had perforated and led to slow death from hemorrhage. It was thought pressure caused the symptoms of ileus.

Dr. W. B. Wishart<sup>7</sup> reports in the *British Medical Journal* the following case:

A cotton twiner, aged 71, who was perfectly well until April 20, 1925, when he complained of severe pain in his back. Persistent vomiting set in two days later. Constipation was absolute from the onset of his symptoms. He was admitted to the hospital April 23. Temperature, 96 degrees; pulse, 120; condition poor. The anterior abdominal wall was rigid, tender, and dull on percussion, the symptoms being more pronounced on the right side. A diagnosis of intestinal obstruction was made. An operation under local anesthesia revealed a pulsating tumor lying to the right of the midline and suggesting aneurism. His condition was too grave to investigate further. He died three days later. Autopsy showed the whole of the small bowel collapsed and lying in the left hypochondrium. The right half of the abdomen was occupied by a large retroperitoneal blood clot, the result of a rupture of a fusiform aneurism of the abdominal aorta.

In the *British Medical Journal* for July, 1925, were reported two cases of abdominal aneurism treated by wiring. One by G. H. Colt, of Aberdeen, and one by C. Jennings Marshall, of London. Both cases died in a few days from acute dilatation of the stomach and duodenum.

M. F. Bledsoe,<sup>8</sup> of Port Arthur, Texas, reports in *Surgery, Gynecology and Obstetrics*, a case of chronic pyloric stenosis with violent pylorospasm together with cardiospasm and hiccough due to an aneurism of the abdominal aorta accompanied by excruciating pain and starvation, which was relieved by posterior short-loop gastrojejunostomy. The man was well and with no distress for at least two years after the operation.

My own case, M. M. W.; male; aged 78; family history, unimportant. Past history practically negative, except typhoid fever at age of 35, and for years a tendency to have diarrhea of a mild type. He also had occasional attacks of lumbago, with definite lameness in the back. For years he was a business man of varied interests, lived sensibly and spent much time out of doors.

He stated he was never sick until July 3, 1925, when after a hurried and busy business trip to Little Falls, Minn., he had a slight stroke. The right facial muscles, speech and right hand were affected. Some difficulty of speech remained permanently, and some paralysis in the face and tingling in the right hand. At the time of his present trouble he was walking a mile or more a day. He ate well, bowels were regular, and he says he felt well except for some weakness on exertion.

Examination, Oct. 4, 1926.—General appearance, well preserved for his age; temperature, normal; pulse, 96 following his walk to the office; blood pressure, 136-82; weight 154½ lb., which was his normal weight; eyes reacted slightly to light and accommodation. Skin, ears, nose, teeth, throat, neck, glands, normal; lungs, normal; heart, normal for size; no murmurs, action regular, rate increased slightly by exercise. Abdomen, negative; no pulsations present and no masses found at any time; prostate, normal; rectum, negative. Nervous system: paralysis of right cheek, slow speech; tongue protrudes in straight line; hand grips equal but conscious of tingling in right hand; reflexes in arms and legs present and active. At this examination the right knee-jerk more pronounced than the left. Aside from his slow speech, mentally he was all right and was attending to his business interests.

From May, 1923, until his death I examined him thoroughly at many times and I always considered him very well preserved for his age. Blood pressures were never very high. They varied from 166 systolic, 90 diastolic to 136 systolic, 80 diastolic. His weight remained constant. Examination of stools in May, 1923, was practically negative. Aside from a slight trace of albumin and a few hyaline casts, his urine was negative. The last year his blood showed some pathological changes.

*Blood Examination.*—May 16, 1923, hemoglobin, 80 per cent; red cells, 4,200,000; leucocytes 8,850; p. m. n.s, 68; small lymphocytes, 17; large, 15; red cells, normal in size and shape. July 2, 1926, after his stroke; hemoglobin, 78 per cent; red cells, 3,780,000; leucocytes, 10,300; p. m. n.s 58; small lymphocytes, 30; large, 10; mononuclear, 2. There was slight anisocytosis and one normoblast present. All cells were large. The last year his blood remained about the same. Red cells, from 3,300,000 to 3,780,000; leucocytes, from 10,300 down to 7,100. Red cells, large and slight changes in shape. Color index, over one. Tonics and diet kept him feeling well, and at the time of his last illness he said he felt better than for a year.

*History of present attack.*—On October 16, his wife called me up and stated he was suffering from a lame back which seemed to bother him considerably. He had vomited a couple of times and getting up seemed to nauseate him. At six p. m. I visited him. As I came up to the bed he remarked to me: "Doctor, you have a man-sized job this time." He evidently realized he was quite sick. He complained chiefly of his back in the lumbar region, and some vague distress in the abdomen, but his attention was chiefly directed to his back. *Examination at 6 p. m.:* pulse, 84, regular and strong; temperature,



normal; chest, negative. In examining his back I noticed he rolled over with ease, lifted his shoulders with no difficulty; there was no muscle fixation, no pain on movement, and no tender areas, so I concluded his symptoms must be referred from a probable abdominal condition. At this examination his abdomen was quite distended with gas and aside from indefinite distress and tenderness, I could not satisfactorily determine his condition, so I suggested an enema, which was soon given. About 7:30 I saw him again, his bowels had moved well, and he had passed considerable gas. It was quite easy at this time to palpate the abdomen. It was now quite flat, the right half soft and relaxed, the left flank soft and relaxed also. Just to the left of the navel was a large mass about eight by four inches, vertical in its long axis. It felt like a distended bowel and was tympanitic on percussion. As the hand was held on this mass it pulsed with the heart beat. My impression was he had developed an obscure carcinoma which had suddenly obstructed his bowels and that the mass was distended bowel due to this obstruction. Fearing forcible or deep palpation I did not further analyze this mass. I made a probable diagnosis of partial bowel obstruction and advised removal to the hospital. At no time until his death was there evidence of shock, hemorrhage, or signs of serious danger. I felt his obstruction would undoubtedly increase and wanted him where he could be operated on promptly. Moving him to the hospital seemed to distress him somewhat and he told me there was a steady pain in the region of the mass.

At 10 P. M. his pulse was 84 to 90, of good volume, and it seemed safe to leave him until morning. He was seen several times by the house physician, who stated his condition remained the same all night. At about 7:40 A. M. he called for a basin, feeling he was about to vomit. Immediately after vomiting, he sank very rapidly and in a few minutes passed out. The cause of death is shown in the autopsy report. Just how long this aneurism was present is a question. It must have been of very recent origin, possibly a few days only. Some hemorrhage was probably taking place several hours before I saw him, for at time of death, jaundice was quite marked in the skin and conjunctivæ. In the aneurismal sac was a large clot with a channel through the center as large as the middle finger. Why, with a sudden aneurism, a prolonged hemorrhage, producing a tumor eight by six inches, there were not more signs of shock, is rather interesting. While the sudden passing out of this patient was a shock, yet he was fortunate in being spared the suffering and invalidism that these cases develop if they do live for any length of time. The treatment, if any, is surgical.

*Postmortem report.*—The body is that of a well-developed, rather poorly nourished white adult male, aged 78, 174 cm. in length; estimated weight 150 lb., rigor absent; hypostasis, purple and posterior; no edema; jaundice +; the abdomen is tympanitic. A tumor mass is palpable to the left of the umbilicus, which gives a flat percussion note on deep percussion.

The subcutaneous fat is from 1 to 2 cm. in thickness over the anterior abdominal wall. It is of a deep yellowish color. The peritoneal cavity con-

tains no excess fluid and no blood. The appendix is a small narrow cord and shows no gross disease. The diaphragm is at the fourth interspace on the right, the fifth rib on the left. There is a large retroperitoneal tumor measuring 16 cm. vertically and 12 cm. transversely. It extends 4 cm. to the right and 8 cm. to the left of the midline and lies posterior at the level of the umbilicus. The tumor mass is about 6 or 8 cm. in thickness anteroposteriorly. It has a deep-red hemorrhagic appearance. There is extensive hemorrhage over the entire tumor area involving all the tissues underlying the peritoneum.

The pleural and pericardial cavities contain no excess fluid; no adhesions.

The heart weighs 390 grams. The chambers are not dilated. No disease of any of the valves. Some sclerosis of the coronary arteries; no closed portions. The root of the aorta shows only occasional small yellowish patches.

The lungs crepitate throughout; no palpable nodules; no excess fluid or pus on the cut surfaces.

The spleen weighs 120 grams. The capsule is thickened and roughened by small hyaline nodules. The cut surface shows no change.

The liver weighs 1,200 grams. The capsule is smooth; the cut surface shows no special changes. No gross disease of the gall-bladder.

No ulcers in the stomach or duodenum. No gross disease of the pancreas or adrenals.

There is a massive retroperitoneal hemorrhage extending over the entire left kidney as well as over the greater part of the retroperitoneal tissues on the left side. Incision into the tumor reveals a large saccular aneurism arising on the anterior surface of the abdominal aorta just above the origin of the common iliacs. The aneurismal sac measures about 6x4 cm. Its wall is very thin and shows a large tear in the extreme anterior portion. There is a large thrombus occupying the greater part of the aneurismal sac, but it is separated from the wall so that blood easily passes out through the tear anteriorly. The intima of the aorta above the aneurism and in relation to the aneurism shows everywhere a very marked change. There are yellowish and whitish intimal thickenings with some thinning of the wall. There is considerable calcification. There are no areas suggesting lues. The thoracic aorta shows only minor arteriosclerotic changes.

The capsules of the kidneys strip easily; external surfaces are smooth. No changes in pelvis or ureters. The prostate is not notably enlarged.

There are no large lymph nodes in the thorax or abdomen. The organs of the head and neck were not examined.

*Diagnosis.*—Aneurism of abdominal aorta with rupture. The aneurism is of arteriosclerotic type.

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## NOTES ON THE EPIDEMIOLOGY OF TUBERCULOSIS\*

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This paper was submitted for publication on June 20, 1920; and Dr. Lampson died on June 25.—THE EDITOR.

With the discovery of the tubercle bacillus came the first gleam of hope for eradication of tuberculosis. Shortly after this the development of tuberculin further stimulated that hope, as it was believed that there had been found a specific remedy.

This hope was finally resolved into the realization that the eradication process was to be slow and painful, as most steps of progress are, even if remotely possible.

Among the facts evolved were some in relation to other factors than the tubercle bacillus in the etiology of tuberculosis. When the relation of the tubercle bacillus to the disease was demonstrated this organism was accepted as the only etiological factor of much importance. We now recognize the fact that many adverse conditions must be present in addition to infection with the tubercle bacillus to promote the development of the disease.

The epidemiology of the disease has to do with only the transfer of the virus from person to person without regard to subsequent development of the disease in the clinical form. Intelligent preventive measures can be applied to a disease only after both etiology and epidemiology are understood. Up to twenty years ago household contact with an open case was not considered much more dangerous than the casual contact with this same case in the social and business world.

The difference in the results of household contact and casual contact is due chiefly to three factors:

1. The Difference in the Dosage of Infection. In the household this is large and constantly repeated. In casual contact the dosage is small and less frequently repeated.

2. Age of Exposure. In the household the group exposed consists chiefly of children. In the business and social world, chiefly of adults.

3. Hygienic Conditions. In the tuberculous household the hygienic conditions are usually worse than in the average of other homes.

Since we have learned that the percentage of infections from household contact is much higher than from casual contact we have spent much money and effort in breaking the household contact by isolating the patient.

It was my privilege about fifteen years ago to accumulate some data to help in the evaluation of various degrees of contact as a factor in tuberculosis infection.

(1) Working with the Antituberculosis Committee of the Associated Charities of Minneapolis under the direction of Dr. Geo. Douglas Head, and later (2) with the Minnesota State Board of Health under the direction of Dr. H. M. Bracken, our plan was to survey a number of selected family groups part of which had been fully exposed to infection by an open active case continuously for at least a year, and part of which had not had such exposure.

The survey consisted of a physical examination of each member of these families together with laboratory and tuberculin tests. As we were searching for evidence of infection and not clinical conditions the von Pirquet test was relied on as the decisive factor in all not showing conclusive physical signs.

In the Minneapolis group 55 families were included in the survey, which we made between December, 1910, and July, 1912.

There were 33 families in the group having had intimate contact with an open case for at least one year.

Four families each contained a latent case in which bacilli had never been demonstrated.

Three families each contained a healed case.

Ten families each contained a case which had been under observation as a suspect, but proved non tuberculous.

Five families used as controls never had a suspect.

In the 33 families who had had intimate contact exposure there were 173 members who were examined; 124 including 23 center cases showed evidence of infection.

In the 4 families containing latent center cases there were—

Twenty-two people who were examined.

Eight of these, including 4 center cases, showed evidence of infection.

\*Presented by invitation before the Lymanhurst Medical Staff, March 27, 1927.



In 3 families containing healed center cases—  
Twelve people were examined.

Six of these including 3 center cases showed evidence of infection.

In 10 families classed as non tuberculous through inability to find any sign of tuberculosis in the suspected member—

Fifty-six people were examined.

One showed evidence of infection and had not been a suspect.

In 5 families used as controls and containing no suspects there were—

Twenty-four people examined.

One showed evidence of infection.

Dividing the 55 families into two groups, 40 tuberculous and 15 non-tuberculous, the tuberculous group showed infection in 66 and 2/3 per cent of 207 examined. The non-tuberculous showed 2.5 per cent of 80 examined.

The group of families examined for the State Board of Health, August to December, 1912, under the direction of Dr. Bracken were all from rural communities.

In the 97 families studied 449 people were examined. These families were located in five counties, Rice, Wright, Meeker, Kandiyohi, and Marshall, this giving as wide as possible a range of latitude and also living conditions. Fifty-one lived on farms and 46 in the towns and villages of these counties. The families were selected by taking a list of names from the deaths and positive sputum cases of 1911. Satisfactory evidence was obtained from surviving members and physicians that 3 of these deaths were wrongly reported and that there had been no suspicion of tuberculosis. One man had had carcinoma of the stomach for a year. Two weeks before death he developed what was evidently a septic pneumonia and died of hemorrhage. Another was known to have aneurism of the abdominal aorta and died suddenly from rupture of that. Another died of acute lobar pneumonia having been in good health previously. These and six other unexposed groups encountered appear in my report as non-tuberculous and are so used in figuring percentage.

Fifteen groups, consisting of 104 people, where there had been exposure for only a short time due to early diagnosis and subsequent sanatorium care, were classed as partial exposure groups.

The remaining 73 groups, consisting of 307 people, were classed as having had complete exposure even though in some instances the reported case had died of non-pulmonary disease.

The results were tabulated according to the degree of exposure and also according to the form of disease.

#### DEGREE OF EXPOSURE

307 examined, fully exposed 244, or 79 per cent positive.

104 examined, partially exposed 30, or 29 per cent positive.

38 examined, doubtfully exposed 3, or 8 per cent positive.

#### TYPE OF DISEASE

384 exposed to pulmonary, 262 or 68 per cent positive.

34 exposed to non-pulmonary, 11 or 32 per cent positive.

38 non-tuberculous, 3 or 8 per cent positive.

In the Minneapolis survey two instances were found where a child was born into the group after the death of the last open case, and in both instances this child was the only one in the group who failed to react to tuberculin. Two exactly similar instances were found in the rural groups.

Two groups were examined in the Minneapolis survey in both of which the history was given that the mother had been an open case and had recovered. The children, two in each instance, born after the mother's recovery were negative to tuberculin, while the older children were all positive.

In one Minneapolis group examined two months after the diagnosis of the center case no spread of infection was found. Six months later the two children, 5 years and 10 months old, reacted to tuberculin.

Combining the city and rural groups there were 514 in the complete exposure group of whom 382, or 74 per cent, reacted.

In 118 of the non-tuberculous group, 5 or 4¼ per cent, reacted.

(3) Dr. S. A. Slater, of Worthington, Minnesota, reported, in 1924, on the results of the von Pirquet tuberculin test in 1,654 children of a Minnesota rural community. His work shows a cross section of the incidence of tuberculous infection in his territory. The children were not selected individually or by family, but were taken by the school and subsequently classified according to history of exposure.

In analyzing his results he groups the children under three heads:

Group 1. No history of exposure.

Group 2. History of doubtful exposure.

Group 3. History of known exposure.

This puts them in yearly age groups of from 5 and under to 16 and over.

In Group 1, with no history of exposure, 563 at all ages were tested. Thirty, or 5 per cent, of these showed a positive reaction.

In Group 2, with history of doubtful exposure, 1,025 were examined, and 88, or 8 per cent, showed a positive reaction.

In Group 3, with history of known exposure, 67 were tested and 54, or 80 per cent, reacted to the von Pirquet test.

In the total of 1,654 there were 171, or 10 per cent who reacted.

He calls attention to the fact that figures showing 60 per cent to 90 per cent of all children 15 years of age as reacting to the von Pirquet test were obtained from the records of clinics and dispensaries in a country where tuberculosis is much more prevalent than it is here and from a group of children who were examined on account of exposure, practically corresponding to his known exposure group. He argues that a cross section of a Minnesota rural-school popu-

lation is a very different matter from a cross section of a clinic or dispensary population in central Europe.

His work was undertaken to show the incidence of tuberculous infection in his territory.

Incidentally it shows the high percentage of infections in the fully exposed and the low percentage in the casually exposed.

Our work in Minneapolis and the rural districts was undertaken to show the high percentage of infections in the fully exposed and the low percentage in the casually exposed, but as we were working with selected families we could not show the incidence of infection in the general population.

#### REFERENCES

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3. The Result of the von Pirquet Tuberculin Test in Sixteen Hundred and Fifty-four Children of a Minnesota Rural Community. S. A. Slater, A.B., M.D., Worthington, Minn. Proceedings of the Clinical Section of the Twentieth Annual Meeting of the National Tuberculosis Association, Atlantic City, May, 7, 1924.

## PROCEEDINGS OF THE MINNEAPOLIS CLINICAL CLUB

Meeting of May 19, 1927

The regular monthly meeting of the Minneapolis Clinical Club was held on Thursday evening, May 19, 1927, at the Elks Club. Dinner was served at 6 p. m., and the meeting was called to order by the President, Dr. J. M. Hayes, at 7 p. m.

Dr. H. L. Ulrich had been invited to present a paper before the Club, and he reported a series of cases of infections of serous membranes, as follows:

1. Cardiolytic. Patient presented, nearly three months after operation.
2. Four cases of primary peritonitis. (To be published.)
3. Case of pleural and peritoneal infection.

#### DISCUSSION

DR. HAYES: I am sure we are very much indebted to Dr. Ulrich for this very interesting group of cases.

DR. T. A. PEPPARD: I merely want to add testimony in the first case in regard to the improvement since cardiolytic. He was on the service several months, always decompensated, and we had quite a time to get the operation performed. He is in better condition now than he has been for several years. This is the second case of cardiolytic that I have been in close contact with. The first

one was a boy at St. Mary's Hospital who was very badly decompensated and died twelve hours after operation. This young man here tonight is what appears to be a good result.

In regard to the second group of cases of primary peritonitis: we saw one case subsequently in a man outside who had been sick for eight or nine days with an upper respiratory tract infection. He had colicky abdominal pain and was a very sick man. He had a leucocytosis. I saw him in consultation, and the doctor in the case thought perhaps he had pneumonia, but none was demonstrated. The surgeon in consultation and I felt that he should not be opened. He subsequently died, and autopsy showed a peritonitis with no discoverable focus and a streptococcal infection.

In the last case of pleural exudate with peritoneal inflammation as well, there was surely a very good reason for conservative treatment. The reason for not going in was that you could find no place to aspirate. Certainly in the course of events that judgment was justified.

DR. J. M. HAYES: I think it is well recognized that there is usually no surgical help for those patients with primary peritonitis. There is no doubt but what the surgeon hoped to find a focus of infection in those cases when he opened the peritoneal cavity.

Primary peritonitis is rather rare. In most of the cases of peritonitis we do find a focus of infection in the peritoneal cavity, and it is always a



strong temptation to open up the abdomen in the hope of finding the trouble in these cases.

In general bacteremia, surgery is generally futile. Hugh Young's work would indicate that our best hope in these cases in some one of the analine dyes, intravenously.

In regard to cardiolysis in adhesive pericarditis; I have seen two cases of supposedly adhesive pericarditis, but we were not positive enough in our diagnosis to be able to promise the patients help, consequently they would not submit to surgery. I am glad Dr. Ulrich had the courage of his convictions, and persuaded the surgeon to operate in this case. I think it is the thing to do when you are sure of your diagnosis.

On behalf of the Clinical Club, I wish to thank Dr. Ulrich for presenting these interesting cases.

Dr. F. W. Wittich gave a talk on "Graphic Blood-Pressure Records in Health and Diseased States," and gave a demonstration of a new blood-pressure apparatus.

Dr. J. C. Michael demonstrated roentgenograms of two cases of cord tumor showing the level arrest of heavy iodized oil previously injected by the cisternal route. In both cases clinical examination permitted localization of the tumor, one in the upper dorsal, the other in the lower dorsal regions. Subarachnoidal block was determined by the procedure of Quackenstaedt. The films, taken after the injection of iodized oil, illustrated a clearly visible technical confirmation of diagnoses arrived at with clinical methods. The first case proved to be a Hodgkin's tumor mass; the second had not been operated upon at the time of this report. This case is that of a man 67 years of age, who presents what appear to be senile changes in the spine.

Dr. Walter E. Camp gave a paper entitled "The Etiology of Nerve Deafness," illustrated with numerous lantern slides.

#### DISCUSSION

DR. CAMP: We do see a large number of cases of beginning or moderate deafness, either unilateral or bilateral, coming on in people who have no trouble in hearing the spoken voice, but in the higher or lower tones they have marked impairment. In many of these cases the etiology cannot be found.

DR. MICHAEL: I would like to ask Dr. Camp how he treats these cases of toxic neuritis of the 8th nerve. I have had the impression that in the syphilitic cases we find islands of deafness which by the

ordinary functional tests we could not detect. The functional complaints, referring to the 8th nerve, on the part of patients who have central nerve syphilis are, according to my experience, not so considerable; not so frequent as quoted by the authors mentioned by Dr. Camp. Presumably the percentage would be higher in an ear clinic than in a neurologic clinic.

DR. KENNETH PHELPS: I had an opportunity of working in a Clinic at one time in which all patients having syphilis were given a complete general examination, including the eye, ear, nose, and throat as a routine. Usually they did not complain of deafness but it was surprising to find even in early primary syphilis that many patients had trouble with hearing, and particularly the nerve type. In regard to the mechanical methods of testing hearing and plating a curve, there is one warning, and that is we should not forget our old-fashioned clinical methods. Once in a while we get a curve typical of inner ear deafness, if we do not look at the ear, and we are surprised when the drum ruptures and we find we have been dealing with an otitis media and not nerve deafness.

The American Otological Society has been collecting a certain sum of money to investigate this problem, and they now have a laboratory in charge of my old chief, Dr. Crowe, of Baltimore. He has a routine examination made of everybody's hearing who goes through the Johns Hopkins Hospital. From every case which comes to postmortem, the temporal bone is taken, and a pathological examination made. Eventually, we will have some pathological data from this on which we can base our findings. We can not be too sure of our mechanical findings as yet. Each mechanical device that comes out inclines us to depend on it and neglect the old and more difficult methods of examination.

DR. CAMP (closing): As to the method of treatment of toxic auditory neuritis, we should search for the cause and remove that if we can find it. Then there is forced elimination, pilocarpin, sweats, etc., which do some good, although there is some residue of permanent damage which cannot be repaired.

A large number of these patients with syphilis have no auditory symptoms, but if they are tested thoroughly a large percentage of them will show a reduction in the high tones and a reduced bone conduction. Our percentages of impairment will go up as better methods of testing are employed.

I think this work of the Otological Society, mentioned by Dr. Phelps, is going to net a whole lot of information because it will give a lot of facts not otherwise obtainable.

The meeting adjourned.

H. M. N. WYNNE, M.D.

Secretary

# THE JOURNAL-LANCET

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## LANDRY'S PARALYSIS

This disease has been described in some of the text-books as acute ascending paralysis, and now that we know more, or think we do, at least, of the various bacterial activities, particularly those that are associated with or involved in influenza or poliomyelitis, we are perhaps able to understand a little better what Landry's paralysis really means. We are particularly interested because so many of the newspapers have spectacularly printed articles on young people who are suddenly stricken with a quick form of spinal disease and who are featured so graphically by the press, in which they describe the frantic efforts of the friends and everyone interested to continue artificial respiration in a perfectly hopeless case. Of course, the attitude of the friends and workers is patriotic and inspiring because it is done out of sympathy and with the hope of saving one of these patients from death.

This is not a new disease in any sense of the word, and it came to the surface very prominently in our early forms of the la grippe epidemic, in the influenza epidemic of 1918, and since then. It is recognizable at once as it usually involves, or is ushered in by, rapidly developing paralysis, which begins in the legs, then in the tongue, arms, and the respiratory and throat muscles. There is little disturbance of

sensation, there are no atrophies or changes in electrical irritability, and no involvement of the sphincters. Frequently the patient remains entirely conscious throughout the attack. Usually the course of the disease is a rapid one, not uncommonly the patient dies within forty-eight to sixty hours, and, as the newspapers inform us, death may be postponed from one to four weeks. In some instances the attack stops short of the medulla, and these patients become either totally or nearly totally paralyzed below the neck, and in rare instances there is an improvement, and this improvement continues over a one or two-year period just as in poliomyelitis or encephalitis, and eventually the patient may develop a fair degree of health. Usually, however, the attacks come on and the bulb, the cerebello-pontine angle, is involved, and this in turn involves the origin of the lower cranial nerves. In that event death is almost inevitable. So far as one can see, no case has been saved that had a definite bulbar lesion. It really belongs to the group of "polio" cases; it simply happens to strike a different region. The writer remembers in the early epidemics of influenza that three patients out of twelve that occurred in one month with various forms of paralysis died within a sixty-hour period; and authorities have cited instances where the pulmotor and other forms of artificial respiration have continued for from one hundred to three hundred thirty-six hours.

It is remarkable how much these people endure, and how comparatively little suffering they undergo. But with paralysis of deglutition and respiration, although the patient remains completely conscious, it must be an exhausting and terrifying condition. Doubtless some of these patients have been kept alive for a short time by artificial respiration. When one considers the enormous amount of exercise of the upper extremities with alternating pressure on the chest wall one wonders why the effort should be made to keep these people alive, for if they were going to live they would in some way develop some mechanism which would keep them breathing, and if they do not it is absolutely certain that death will follow. The pounding and pumping of the arms and pressing of the chest is almost enough in itself to hasten death in these cases. It is doubtless true that everything else has been used in the way of restoratives, like adrenalin, strychnia, digitalis, and ergatine (for drugs), while probably lumbar punctures have been freely made, artificial feeding kept up through the bowel, with salt solutions and lactose and things of that sort, but the result is usually the same.



The cause is microbic, and, as has been said before, they are probably the same types of streptococcus that are found in poliomyelitis, and encephalitis, or in botulism. Occasionally the streptococcus, diplococcus, and pneumococcus, which cause intense diffuse myelitis, have been found.

### MEDICAL PUBLICITY

Articles have been appearing in the newspapers every week now, for some time, on diet. A series of sixteen articles are to be published in the daily press. They are written by twenty-two nationally known physicians and dietists, called together by the American Medical Association. The articles of late have been chiefly related to reduction processes, and they all contain very much matter which is good for people of all ages to read. Diet reduction is not so simple as it seems, for there are undoubtedly a great many people who have a chemistry over which they have no control. These people are fat, and anything they do to reduce their weight is often disappointing. They may be perfectly conscientious in their efforts to reduce the amount of food they eat, or they may keep on a strict diet of some kind that is reducing, yet, in spite of all their efforts by diet and exercise, they gain in weight. The same condition is evident in another class of people who are thin, and who eat anything and everything that is fattening, yet gain not an ounce. So it must be due either to something inherent in them, in their physiology or chemistry, or to their ability to digest and absorb foods that bring these conditions of thinness and fatness about.

Of course, large people produce relatively more heat than small people, and they perhaps need a greater amount, proportionately, of food than do others. It happens, too, that many of these people owe their heat production to an overactive thyroid gland. Consequently, the problem is greater in those who have thyroid disorders and who have these unknown physical conditions which are sometimes unexplainable.

Many curious conditions have been noted, particularly among the fat, who tell the physician that they eat nothing. They mean relatively nothing, but, as a matter of fact, the majority of them deceive themselves about the amount of food they take. Consequently, they continue to add weight. Yet under fairly normal conditions

these same people by careful attention to their diet can lose a pound or two a week, and that is quite enough. The probabilities are they exercise a little more, but if they are strictly honest with themselves they keep their diet down in amount.

In a recent article by Dr. Russell Wilder, who is Professor of Medicine in the Mayo Clinic and is also a dietist, and is constantly planning and working with the dietitians in the Mayo Clinic, he gives a great deal of valuable information. He maintains that the ideal reduction diet combines four groups of foods,—meats, milk, greens, and fruit. These may form a diet in which the calories may be extremely low, 1,000 calories a day, but the character of the foodstuffs will be high in dynamic action and also contain the proper vitamins. Yet people have been known to live on 800 calories a day, as found in the foods mentioned, and yet have gained in weight. So the calory question, as a general question to fat or thin people alike, is a very difficult one. For instance, if a pound of lean meat or lean fish is found to contain a caloric value of 400 to 800, a pound and one-half of green vegetables and fruits a caloric value of about 200, and one-half pint of whole milk 170 calories,—all to be consumed in one day would make a relatively low food intake. Even this amount may produce an increase in weight unless all things relative to weight reduction are carried out. This leaves a great deal for one to decide, and gives one an opportunity to make a very wide selection of foods. Yet how many of us do it? The majority of the people have to eat what is set before them. If they are out for weight-reduction they will note whether they are eating anything that produces fat. If they are out for weight-increase they will soon find they have to increase the number of calories or the quantity and quality of food.

Recently a family decided to take up the milk diet. They found it outlined in a popular magazine. There were three in the family,—father, mother, and daughter. They consumed fifteen quarts of milk a day, each drinking five quarts daily, and each eating, too, one dozen oranges a day. The combination did not in any way interfere one with the other, nor did any of them get fat; but they lived remarkably well on this diet, which was self-imposed. They got rid of some of their symptoms, and again this year they went upon the milk diet for the second time, all of them coming out successfully, but none of them making any gain in weight.

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DR. EDWARD BOECKMANN

Dr. Edward Boeckmann, internationally known specialist of St. Paul, died at the home of his son, Dr. Egil Boeckmann, at Dellwood, White Bear Lake, on August seventh. Born in Norway in 1849, he was 78 years old at the time of his death. Surviving him are three daughters and a son. The daughters are Mrs. Charles Freeman and Mrs. Clarence Freeman, of St. Paul, and Mrs. Helga Suiler of Munich, Germany.

Norway had honored Dr. Boeckmann with the Order of St. Olaf for his activities in promoting an endowment fund for the University of Christianity. He also was given the degree of doctor of philosophy by that University.

In 1887 Dr. Boeckmann came to St. Paul from Norway, and was prominent among Northwest medical leaders for forty years, specializing in ophthalmology. He was at one time chief medical officer in the Minnesota National Guard, and during the Spanish-American war he held the rank of colonel in the medical corps. He was one of the founders of the St. Paul Hospital and for a number of years was chief of staff at that institution. He achieved distinction as the discoverer of an improved method of preparing catgut for surgical use. When he had perfected his process, he declined to profit by it himself and turned the benefit over to the Ramsey County Medical Society. With funds realized from the manufacture of this material that Society acquired a large library building site, and in recognition of Dr. Boeckmann's gift, originated the Boeckmann Library Building Fund.

The writer knew Dr. Boeckmann very well and had the highest respect for his ability as a physician and his integrity as a man. He was a man who had a very large practice in St. Paul and continued to have up to the last two years. He saw a great many people in his practice and was well known all over the Northwest as one of the real men in his specialty—diseases of the eye and ear. He used to come into his office and find it full of patients, which did not mean four or five but forty to fifty, waiting for him, and he worked until he was unable to work any longer. Not infrequently his office hours were not over until midnight. He accomplished much by his personal attractiveness and the confidence he inspired in all of his patients and

friends. We often wonder whether the coming generation or perhaps the present generation are as eager and as interested in their work and are as willing to sacrifice their time and ability as were some of these older men.

## DR. J. M. KISTLER

Dr. Jonas M. Kistler, Hennepin County Coroner for eighteen years and a Minneapolis alderman for eight years, died on August thirteenth, from the effects of a stroke of paralysis. He was seventy years of age at the time of his death.

Dr. Kistler was a practicing physician in the City for forty-five years. He was alderman of the Fourth Ward. Born in Pennsylvania in 1856, he was graduated from the Keystone State Normal School and later from the Jefferson Medical College of Philadelphia. He arrived in Minneapolis on June 15, 1883, immediately after his graduation, and started the practice of medicine at Sixth and Lyndale Avenues, North, where he continued in his practice to the time of his death, and he had long been identified with civic movements on the North Side of the City. He was a member of the Hennepin County Medical Society and the Minnesota State Medical Association, and he belonged to the Elks, Independent Order of Odd Fellows, Woodmen, and Workmen.

Surviving him are a son, Dr. Alvin J. Kistler, of Minneapolis; three daughters, Mrs. John Greathouse, Mrs. Ben Greathouse, and Mrs. Douglas Larson, all of Minneapolis; four brothers, Dr. C. M. Kistler, of Minneapolis; A. Kistler, of Seattle; D. J. and D. A. Kistler, of Lehigh, Pa.; and a sister, Mrs. A. F. Kistler, of St. Paul.

Dr. Kistler was a unique type of man, and he was a general favorite with the medical men who knew him, because of his rugged honesty and ruggedness of purpose. He was a good fighter when he had to fight, and he was a very staunch friend. Then, he was the type of man who had labored in one locality for many years and he gathered about him thousands of friends. He was indefatigable in his efforts to look after his patients, and he doubtless has a record that will always be applauded,—something for the younger generation to remember and pattern after, that they are here to take care of the sick. That he did, cheerfully and willingly, and no doubt very often without any remuneration.

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HONORING A MAN WHO IS STILL  
ALIVE AND WORKING AT 84—  
DR. H. H. KIMBALL

Having said so much about the deaths among physicians, THE JOURNAL-LANCET wants to pay tribute to Dr. H. H. Kimball, of Minneapolis, who is still at work in his office in the Besse Building, in his eighty-fourth year; and, what is better still, he preserves that activeness of elderly life that is youthfulness. He is swift on his feet, he is able to take an interest in his practice, and he loves to send his patients about to someone whom he thinks can take better care of them than he. He has in him that "something" that marks him as a man who has learned wisdom through long experience and knowledge. One recalls an incident in connection with a case of hernia that was seen by two or three men,—a patient of Dr. Kimball's. After an attempt at reduction had been made, Dr. Kimball took things in his own hands, grasped the hernia vigorously, pressed it down lustily, and the bowel slid into its normal position. It takes a good deal of character and knowledge and a good deal of daring to do such a thing, but that is characteristic of Dr. Kimball. He knew that the patient should not be operated on, and he had the satisfaction of reducing the tumor, leaving the man in a perfectly normal state. Yet most of us would hesitate to attack a hernia in this savage style, fearing that it might burst. But the doctors of the olden time knew, from long experience, as they had reduced many hernias before in a similar manner, and they were not afraid to continue it. We have no doubt if Dr. Kimball would go over some of his experiences and particularly those of the early days he could give us many instructive ideas for consideration. He has lived a long and useful life, and we are expecting him to continue in his work for many years. He looks as if he would, and doubtless he will.

Good old soul, good old sport; may he live long and be happy, and may there be others like him.

The editor expects that this will take the place of a basket of flowers should Dr. Kimball die at a hundred years of age, and paying tribute to the living is a good thing to do.

MISCELLANY

DR. VICTOR HUGO STICKNEY—AN  
APPRECIATION

The passing of Dr. V. H. Stickney, of Dickinson, N. D., July 26, 1927, makes another gap in the advance guard of pioneer physicians, who gave the best that was in them for the winning of the West.

Dr. Stickney was born in Plymouth, Vermont, April 13, 1855. His parents, John W. and Anna (Pinney) Stickney, were of English descent, although natives of New England.

Dr. Stickney graduated from New Hampshire College with the degree of Bachelor of Science in 1881, and from Dartmouth Medical College as an M. D. in 1883. After graduating he located for the practice of his profession at Dickinson, North Dakota, where he made his home through all the intervening years. He was the first physician to locate in the state, west of Mandan. What a magnificent heritage! From the Missouri on the East away across the Dakota boundary on the West, and from the land of the maple leaf on the North to the sand dunes and beyond on the South. In the middle of this domain—clean, fresh, free as a gift from Deity—he settled and did his day's work. He was the type of man that means much in a new country. He had the culture of a refined gentleman, and this he never once lost in all the rough days on the frontier. He also brought with him the New England ideals of honor, integrity, and true manhood. Coupled with all this he had the faculty of meeting with men of all grades, and was equally at home in the company of a future president of the Union as in that of an ordinary rider of the range.

From this we can readily see that Dr. Stickney was an outstanding figure in the early history of the State and his counsel eagerly sought when problems of the greatest moment, social, economic, and governmental, were awaiting solution. It was a stage on which great men played,—McKenzie, Roosevelt, De Mores, Wibaux, Grass, Gall, Sitting Bull; and Dr. Stickney was the peer of them all.

It was as a physician, however, that he was most endeared to the people. Vast as his territory was he managed to cover it wonderfully well. A hundred-mile trip, with relays of saddle horses, was not an unusual thing for him, and when he reached his destination he had to be prepared for any emergency—a bullet wound, a broken bone, a fever victim, or when two lives hung in the balance at some remote rancher's home. These and others were to be thought of in the day's endeavor. The people went to him with their ills, their troubles, and their problems, and to all he gave patient hearing, skilled professional service, and honest, timely, and mature counsel.

Dr. Stickney did much for organized medicine in the state, and was honored by his fellows by being elected President of the North Dakota Medical Association in 1915, and for many years Delegate to the American Medical Association.

Of Dr. Stickney it may well and truthfully be said: "His life is an inspiration and his memory a benediction." If a hearty handshake, a kindly greeting,

a word of cheer, a helpful deed, and a sympathetic interest in human affairs count for aught, then Dr. Stickney's memory will ever be fragrant, for his was the abundant life.

Surviving are two children, Mrs. A. P. Nachtwey, of Dickinson, and Miss Dorothy H. Stickney, of New York.

J. GRASSICK, M.D.

## BOOK NOTICES

**MUSCULAR CONTRACTION AND THE REFLEX CONTROL MOVEMENT.** By John F. Fulton. Cloth, \$10.00. Pp. 644, with illustrations. 1926. Williams & Wilkins: Baltimore, Md.

Fulton's book on "Muscular Contraction and the Reflex Control of Movement" presents an admirable summary of our knowledge of this important subject. In addition, the writer has included many data collected personally in the laboratory so that the work is decidedly more than a mere compilation of the studies of previous investigators.

After an interesting historical introduction, the author considers the various electrical and mechanical phases of muscular contraction.

In Part II Fulton takes up "The nature of the integrative control exerted by the central nervous system upon skeletal muscle fibers in the performance of movements and in the maintenance of postures."

The vast amount of information in the book precludes any satisfactory summary of the contents and serves as evidence of its importance for the teacher of physiology, the research worker in this difficult field and the clinician who desires to correlate fundamental physiologic facts with the muscular phenomena observed in his patients.

The book is not easy to read in a cursory manner, but, rather, requires concentrated study, which will repay the reader many times for his efforts.

—J. C. McKINLEY, M.D.

**THE NORMAL CHEST of the Adult and the Child,** including Applied Anatomy, Applied Physiology, X-ray and Physical Findings. By J. A. Myers, Associate Professor of Preventive Medicine, Medical and Graduate Schools, University of Minnesota; Medical Director, Lymanhurst School for Tuberculous Children, Minneapolis, Minnesota, in collaboration with S. Marx White, Professor of Medicine, University of Minnesota; R. E. Scammon, Professor of Anatomy, University of Minnesota; A. T. Rasmussen, Professor of Neurology, University of Minnesota; C. A. Stewart, Assistant Professor of Pediatrics, University of Minnesota; George E. Fahr, Associate Professor of Medicine, University of Minnesota, with an introduction by Elias P. Lyon, Head of the Department of Physiology and Dean of the School of Medicine, University of Minnesota. Baltimore: The Williams & Wilkins Company, 1927.

In offering this work to the physician and student, the author has rendered a distinct service not heretofore covered by a text known to the reviewer.

In it is obtained a concise survey of the normal chest including structure, development, innervation,

physiology, and physical signs. The description of the physical signs has been turned to good account to guide the student to recognize the abnormal.

The text makes available facts of normal structure and function unencumbered with unessential detail and may be said to bridge the gap between basic science and clinical application in its field. The practical consideration of surface relations aids greatly in the understanding of the physical signs of the chest.

The author has been fortunate in the choice of collaborators. The chapters on the examination of the normal heart and great vessels, the normal chest in infancy and childhood, and the acoustics of percussion and auscultation are excellent; those on the development and innervation of the chest will undoubtedly amplify considerably the reader's knowledge.

The book is well illustrated: the drawings of Miss Hirsch of the surface anatomy relations and signs add distinctly to its teaching value.

Dr. Myers is to be praised for the recognition of the need for such a text and for the admirable manner in which the subject has been covered.

—C. A. McKINLEY

**THE DISEASES OF INFANTS AND CHILDREN.** By J. P. Crozer Griffith, M.D., Ph.D., Professor of Pediatrics in the Graduate School of Medicine of the University of Pennsylvania, and A. Graeme Mitchell, M.D., Professor of Pediatrics, College of Medicine, University of Cincinnati. Second Edition, Reset. Two octavo volumes totaling 1715 pages with 461 illustrations, including 20 plates in colors. Philadelphia and London: W. B. Saunders Company, 1927. Cloth, \$20.00 net.

The new edition of this work brings this standard text-book up to date. The newer methods of diagnosis and treatment that have come into vogue during the past ten years are discussed in great detail. The style is clear and concise and affords an excellent text-book for the study of pediatrics. As a quick reference book for the pediatrician, I do not think these two volumes can be excelled.

—D. M. SIPERSTEIN, M.D.

**THE SURGICAL CLINICS OF NORTH AMERICA.** (Issued serially, one number every other month.) Volume VI. Number 3. (Chicago Clinic Number, August, 1926). 324 pages with 101 illustrations. Per clinic year (February 1926 to December 1926.) Paper, \$12.00; cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company

This volume of Surgical Clinics of North America is the Chicago number.

Of the especial interest in this number are the clinics of Dr. Arthur D. Bevan, on "Surgery of the Stomach and Colon." Dr. Allen Kanaval has a very instructive treatise of "Pre-operative and Post-operative Care of Patients." Dr. Hedblom has treated the subject of "Thoracic Surgery" quite extensively. Dr. G. L. McWhorter adds a great deal of information both for the surgeon and the general practitioner on the treatment of "Pott's Fracture." Drs. Starr, Blain, and McNealy cover the field of "Biliary Disease." This subject was treated from a rather conservative viewpoint, but has covered both as to diagnosis and treatment.



This number also contains some very good articles by such men as Dr. Karl Meyer, Dr. Vincent O'Connor, Dr. McKenna, Dr. D. N. Eisendrath, on surgical subjects in their respective fields.

—E. A. REGNIER, M.D.

THE SURGICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month). Volume 10, Number 5. (Boston Number, 1927). Octavo of 309 pages with 34 illustrations. Per clinic year; July, 1926, to May, 1927. Paper, \$12.00; cloth, \$16.00, net. Philadelphia and London: W. B. Saunders Company.

This volume, the Boston Number, is a most interesting one. All of the articles written show the evidence of a great deal of thought; and, while all of them should be read, only a few can be individually mentioned.

The first clinic, by Dr. Christian, on "Diffuse Pulmonary Emphysema," is very clear and presents one aspect in the study of severe cyanosis.

Doctors Minot and Murphy present a good discussion on the "Liver Diet in Pernicious Anemia" and the "Distinction between Aleukocythemic Myeloid Leukemia and Pernicious Anemia."

Doctors Sprague and White present a clinic on "High-grade Heart Block Under the Age of thirty." They state that heart block in young patients is usually related to one of four factors: acute general infection, rheumatism of the heart, congenital defects, or trauma. They state, further, that it still remains to be demonstrated conclusively that diphtheria is the agent responsible for heart block lasting for more than a few days.

Doctors Joslin, Root, and White give an excellent discussion of diabetic coma and its treatment.

Doctor Roger Lee gives a résumé of a case of thyroid dysfunction associated with fever.

Many other papers go to make this volume an extremely good number and one well worth reading.

—A. CARDLE, M.D.

## NEWS ITEMS

Dr. Kertesz has moved from Pine River to Arlington.

Dr. O. J. Smith has moved from Summit, S. D., to Iroquois, S. D.

Dr. C. O. Robinson has moved from Bismarck, N. D., to Atlantic, Iowa.

The Inter-State Postgraduate Assembly meets in Kansas City on October 17-20.

Dr. R. D. Bergen, of the Mayo Clinic, Rochester, was married to Miss Mary Goggin, also of Rochester, last month.

Dr. L. W. Hardin, of Flandreau, S. D., has been appointed superintendent of the Moody County Board of Health.

Dr. Paul Kenyon, of Wadena, leaves next week for a two months' trip to Paris and other European medical centers.

Dr. Kenneth K. Sherwood, a 1916 graduate of the U. of M., has become associated with Dr. W. R. Humphry, of Stillwater.

Dr. A. G. Anderson, of Minneapolis, has returned from Europe, where he spent three months in postgraduate work.

Dr. F. P. Silvernale, formerly of Elmore, Minn., has become associated with Dr. H. J. McGregor, of Great Falls, Mont.

The Vermillion (S. D.) Hospital, which has been closed for some time, has been opened in a new building with a capacity of ten beds.

Dr. C. O. Heimal, of Rochester, and Miss Emma E. Goodfellow, daughter of Dr. John R. Goodfellow, of Superior, Wis., were married last month.

Dr. Aaron Stolinsky, formerly resident physician and surgeon of St. John's Hospital, Fargo, N. D., has moved to Sheldon, N. D., where he is permanently located.

Dr. Charles Cervenka, who recently completed his internship at the General Hospital, Minneapolis, has become associated with Dr. E. E. Novak, of New Prague.

Dr. J. A. Gould, of Columbus, Ohio, has joined the staff of the Sioux Falls (S. D.) Veterans' Bureau. He will have charge of the mental and nervous disease cases.

Work on the new building for St. John's Hospital of Rapid City, S. D., was begun last month. The building will have a capacity of 75 beds, and will cost about \$150,000.

Dr. J. W. Kistler, of Minneapolis, a prominent and old-time physician, died on August 13, at the age of 71 years. A notice of his life appears in our editorial columns.

Dr. Jesse Long, of Minneapolis, returned last month from a seven months' trip around the world. He spent ten months in visiting the hospitals of Glasgow and Scotland.

The American Occupational Therapy Association will meet in Minneapolis on October 10, and a very large attendance is expected. A program of marked interest is provided.

Dr. Arthur L. Travis, of Minneapolis, died on August 16 at the age of 66. Dr. Travis was a graduate of Rush, class of '87, and had practiced in Minneapolis for sixteen years.

Dr. H. U. Knudtson, who recently sold his practice in Browerville, has completed a special course in eye, ear, nose and throat work in Chicago, and has located in Pipestone, where he once practiced.

Dr. Robert H. Ryburn, of Dillon, Mont., died last month at the age of 54. Dr. Ryburn was a graduate of the University Medical College of Kansas City, Mo., class of '96, and had practiced in Dillon since 1900.

Dr. H. A. Harris, of the department of anatomy of University College, London, arrived in Rochester yesterday to remain for two months in the Mayo Clinic. Dr. Harris spent several months at the Clinic last year.

The Medical Society of the Missouri Valley holds its fortieth annual meeting in Des Moines, Iowa, on September 14-16. The tentative program can be obtained from the Secretary, Dr. Chas. Wood Fassett, Kansas City.

Dr. Gunnar Ahlgren, docent of philosophy at University of Lund, Sweden, is spending four

months in the Mayo Clinic in the metabolism laboratory as temporary associate. He is introducing methods for the study of tissue metabolism which he has developed in conjunction with Professor Thunberg.

The American Hospital Association will hold its annual meeting in Minneapolis on October 10 to 14. Several thousand visitors are expected, many being attracted by other organizations allied to the Hospital Association and meeting on the same date. These are the American Association of Hospital Social Workers, the National Dietetic Council, and the American Occupational Therapy Association.

The State Department of Health of North Dakota has issued a 90-page pamphlet giving the public health laws of that State, and the information is indispensable to all North Dakota physicians. It not only tells what physicians must do in all health matters, but it suggests what they may do to help health offices, and this is what they should want to do. The contents of this pamphlet show what the medical profession of a comparatively young state is doing for the people of that state. The pamphlet is admirably arranged and printed.

#### PHYSICIANS LICENSED AT THE JULY (1927) EXAMINATION TO PRACTICE MEDICINE AND SURGERY IN NORTH DAKOTA

Name	School and Date of Graduation	Address
Weeks, Sam Allen .....	Northwestern Univ., June 14, 1926.....	Jamestown, N. D.
Grieve, Harry Gordon .....	Univ. of Manitoba, May 18, 1925.....	Ambrose, N. D.
Campbell, William .....	Univ. of Manitoba, May 18, 1927.....	St. Boniface, Manitoba, Canada
Bennett, Edward J. ....	Univ. of Manitoba, May 18, 1927.....	Winnipeg, Canada
Stolinsky, Aaron .....	St. Louis Univ., June 7, 1926.....	Sheldon, N. D.
Reznowski, Lorne William .....	Univ. of Manitoba, May 18, 1925.....	Walhalla, N. D.
Flaten, Alfred N. ....	Washington Univ., June 8, 1926.....	Edinburg, N. D.
Waldren, George R. ....	Northwestern Univ., June 7, 1927.....	Drayton, N. D.
Beithon, Elmer J. ....	Univ. of Iowa, June 7, 1926.....	Hankinson, N. D.

Ten candidates took the examination, nine were licensed.



# MEETING OF THE NORTHERN MINNESOTA MEDICAL SOCIETY

St. Cloud, Minnesota, September 12-13

## PROGRAM

Banquet Speaker—Dr. C. S. McVicar, Mayo Clinic, Rochester, (Hepatic Disease.)  
Lay Speaker—Bishop G. G. Bennett, Duluth.  
President's Address—Dr. W. W. Will, Bertha.  
Toastmaster—Dr. E. L. Tuohy, Duluth.

## Clinics

1. Medical Clinic—Dr. J. P. Schneider, Minneapolis.
2. Pediatric Clinic—Dr. O. W. Rowe, Duluth.
3. Surgical-Pathological Demonstration—Dr. A. A. Zierold, Minneapolis; Dr. W. A. O'Brien, Minneapolis, University of Minnesota.
4. Dermatologic Clinic—Dr. H. E. Michelson, University of Minnesota.

## Papers

1. "Osteomyelitis in the Superior Maxilla in Childhood, with the Presentation of Two Cases"—Dr. Thos. N. Fleming, St. Cloud.
2. "Cerebro-vascular Lesions in the Aged"—Dr. L. R. Gowan, Duluth.
3. "Neuro-syphilis"—Dr. W. H. Hengstler, St. Paul.
4. "Headaches from the Neurologic Standpoint"—Dr. Gordon Kamman, St. Paul.
5. "Recent Advances in Contagious Disease Therapy"—Dr. E. S. Platou, Minneapolis; Dr. C. A. Stewart, Minneapolis.
6. "Appendicitis in Childhood"—Dr. R. L. Kennedy, Mayo Clinic, Rochester.
7. "Postoperative Ileus"—Dr. C. O. Estrem,ergus Falls.
8. "Inguinal Hernia Under Local Anesthesia, and Advances in Technic—A Report on 700 Cases"—Dr. S. R. Maxeiner, Minneapolis.
9. "Newer Aspects in the Diagnosis and Treatment of Chronic Cholecystitis"—Dr. M. O. Oppegard, Crookston.
10. "Newer Aspects in the Surgical Treatment of Pulmonary Tuberculosis"—Dr. L. E. Daugherty, St. Paul.
11. "Pathological and Clinical Study of 400 Cases of Primary Hypertension"—Dr. E. T. Bell, University of Minnesota, Minneapolis.
12. "The Various Forms of Bladder Neck Obstruction"—Dr. F. E. B. Foley, St. Paul.
13. "Preoperative Care of Prostatic Patients"—Dr. F. R. Wright, Minneapolis.
14. "Tularaemia in Northern Minnesota"—Dr. L. L. Merriman, Duluth.
15. "Principal Considerations of Heart Pain"—Dr. W. H. Long, Fargo, N. D.
16. "Cardiac Neurosis"—Dr. F. A. Willius, Mayo Clinic, Rochester.
17. "Medical Charities—A Medical Economic Discussion"—Dr. C. R. Christenson, Starbuck.
18. "Diagnostic Dialogue"—Dr. S. Marx White, University of Minnesota, Minneapolis.
19. "Diagnostic Dialogue"—Dr. E. L. Tuohy, Duluth.
20. "The Doctor's Viewpoint"—Dr. George Earl, St. Paul.
21. "Medical Legislation"—Dr. W. F. Braash, Rochester.

## Wanted

Physician's Optical Trial Case. What have you? Address 393, care of this office.

## Locum Tenens Work Wanted

By an experienced physician. Available at once. Address 385, care of this office.

## Minnesota Practice for Sale

In a good country town in southern Minnesota. Fine country, thickly settled. Good cash income. Address 390, care of this office.

## For Sale

New Model McCaskey Cabinet Record System (Physicians'). Cost \$140. Will sell for \$90 cash. Address 391, care of this office.

## Assistant Wanted

For general practice in an exceptionally good location in North Dakota. Opportunity for advancement for the right man. Address 386, care of this office.

## Position Wanted

By a young woman who can do routine laboratory and X-ray work, and who has had several months' experience in physiotherapy. Will work for very low wages. Address 389, care of this office.

## Splendid Location Will Be Open

After practicing here for 19 years I am forced to move to a University city. I will turn over my appointments to a qualified man, ask nothing for my practice; equipment and residence optional. This location is A1 and well worth considering. Write full details and experience. Address Dr. W. H. Young, P. O. Box 25, Baker, Montana.

## Physiotherapy Position Wanted

Trained physiotherapist (woman) would like position in a hospital, clinic, or doctor's office. Have had several years experience in the different modalities in electrotherapy, hydrotherapy, remedial exercise, and massage.

Reference given by those with whom employed and associated. Address 388, care of this office.

## Clinic Location in Minneapolis (200 Oak Grove, on Spruce)

Will arrange space in this new building, 1,000 sq. ft. or less, for physicians or clinic. Private ground floor entrance. Walking distance. Established drug-store operating. Easy to make a medical center in this rapidly developing commercial, hotel, apartment, and hospital zone.

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804 Telephone—Main 4882 Besse Bldg.

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In largest city in North Dakota. Complete equipment suitable for surgical and clinical diagnostic practice, including latest model Acme-International X-ray, diathermy, bacteriological laboratory, instruments, and furniture. Office suite of seven rooms in center of business district. Will sell entire equipment at moderate price. Am going into other business. Available after January 1, 1928. Address 392, care of this office.

PHYSICIANS LICENSED AT THE JUNE (1927) EXAMINATION TO PRACTICE IN  
MINNESOTA

BY EXAMINATION

Name	School and Date of Graduation	Address
Abraham, Arden Llewellyn	U. of Minn., M.B., 1927	2429 Girard Ave. So., Minneapolis
Bernstein, William C.	U. of Minn., M.B., 1927	Stillwater, Minn.
Brown, Harold W.	U. of Minn., M.B., 1927	1055 14th Ave. S. E., Minneapolis
Brown, John Lyman	U. of Minn., M.B., 1927	1055 14th Ave. S. E., Minneapolis
Brown, William Donald	U. of Minn., M.D., 1926	608 E. 14th St., Minneapolis
Dahl, Clarence Arnold	U. of Minn., M.B., 1927	2015 Lyndale Ave. N., Minneapolis
Didriksen, Sarah Hoff	U. of Minn., M.B., 1927	529 Oak St. S. E., Minneapolis
Engstrom, George Frederick	U. of Minn., M.B., 1927	Swedish Hospital, Minneapolis
Haes, Julius Earnest	U. of Minn., M.B., 1927	St. Luke's Hospital, Duluth
Hawkinson, Raymond Paul	U. of Minn., M.B., 1927	1139 Bryant Ave. N., Minneapolis
Head, Douglas Parry	U. of Minn., M. B., 1926	55 Dell Place, Minneapolis
Higgins, George Kendall	U. of Minn., M.B., 1927	1717 Third Ave. So., Minneapolis
Holmer, Valentine Christian	U. of Minn., M.B., 1927	603 Delaware St. S. E., Minneapolis
Hutchinson, Henry	U. of Minn., M.B., 1927	603 Delaware St. S. E., Minneapolis
Inge, Theodore R.	U. of Minn., M.B., 1927	City Hospital No. 2, St. Louis, Mo.
Johnson, Herbert Wm. Everett	U. of Minn., M.B., 1927	Cal. Luth. Hosp., Los Angeles, Calif.
Johnson, Jacob Arthur	U. of Minn., M.B., 1927	525 Jessamine St., St. Paul, Minn.
Johnston, Rufus Oscar	U. of Minn., M.B., 1927	Nashwauk, Minn.
Jones, Wm. Ray	Med. Coll., So. Car., M.D., 1923	1009 Nicollet Ave., Minneapolis
Kerkhof, Arthur C.	U. of Minn., M.B., 1927	1811 Emerson Ave. No., Minneapolis
Leggett, Elizabeth Ann	U. of Minn., M.B., 1927	1931 Iglehart St., St. Paul, Minn.
Leven, Nathaniel Logan	U. of Minn., M.B., 1927	1712 Lincoln Ave., St. Paul, Minn.
McGreane, Frank	U. of Minn., M.B., 1927	Shullsburg, Wis.
Marshall, James Max	U. of Pa., M.D., 1925	Mayo Clinic, Rochester, Minn.
Milton, John Swanson	U. of Minn., M.B., 1927	Swedish Hospital, Minneapolis
Minsky, Armen	U. of Minn., M.B., 1927	1159 N. 6th St., Minneapolis
Moss, Frederic Henry	U. of Minn., M.B., 1927	Apt. 353, Curtis Hotel, Minneapolis
Naslund, Ames William	U. of Minn., M.B., 1927	Eveleth, Minn.
Nelson, Leslie Frank	U. of Minn., M.B., 1927	203 7th St., Cloquet, Minn.
Nelson, Robert Lyman	Northwestern, M.D., 1926	510 Fidelity Bldg., Duluth, Minn.
Saliterman, Bernard Irving	U. of Minn., M.B., 1927	534 Girard Ave. N., Minneapolis
Satterlee, Howard Wilson	U. of Minn., M.B., 1927	University Hospital, Minneapolis
Seeley, Sam Foster	U. of Minn., M.B., 1927	3723 Upton Ave. N., Minneapolis
Short, Jacob	U. of Minn., M.B., 1927	644 Dayton Ave., St. Paul, Minn.
Singer, Benjamin	U. of Minn., M.B., 1927	303 St. Anthony Ave., St. Paul, Minn.
Stevenson, Gilbert Miller	U. of Minn., M.B., 1927	5801 Glenwood St., Duluth, Minn.
Thompson, Arthur	Northwestern, M.D., 1927	Raymond, Minn.
Vaughan, Victor Milton	U. of Minn., M.B., 1927	Winnebago, Minn.
Vezina, John Charles	U. of Minn., M.B., 1927	Ellsworth, Wis.
Warren, Cecil Alexis	U. of Minn., M.B., 1927	208 S. Victoria St., St. Paul, Minn.
Westerman, Alvin Emil	Northwestern, M.D., 1927	Montgomery, Minn.
Wildebush, Frank F.	U. of Minn., M.B., 1927	629 Washington Ave. S. E., Mpls.
Zanger, Isabelle Marie	U. of Minn., M.B., 1927	3101 Humboldt Ave. So., Minneapolis
Zehm, Abner	U. of Minn., M.B., 1927	2804 42nd Ave. So., Minneapolis



# THE JOURNAL-<sup>—</sup>LANCET

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**PLACE OF NEXT MEETING—DEVILS LAKE****PROCEEDINGS OF THE HOUSE OF DELEGATES OF THE NORTH DAKOTA STATE MEDICAL ASSOCIATION**

FIRST MEETING—MAY 31, 1927

The first meeting of the House of Delegates of the Fortieth Annual Session of the North Dakota State Medical Association was called to order at the Dakotah Hotel, Grand Forks, Tuesday evening, May 31, 1927, at 8:45, by the President, Dr. N. Oliver Ramstad, Bismarck.

The Secretary called the roll of Delegates and Councilors, and the following responded:

G. M. Williamson, M.D., Councilor, Grand Forks District.

Paul H. Burton, M.D., Councilor, First District.

J. O. Arnson, M.D., Delegate, Sixth District.

C. E. Stackhouse, M.D., Delegate, Sixth District

Thomas Mulligan, M.D., President-Elect.

Kent E. Darrow, M.D., Delegate, Cass County.

F. W. Ferguson, M.D., Delegate, Kulm

W. C. Fawcett, M.D., Ex-President.

J. P. Aylen, M.D., Ex-President.

Chas. MacLachlan, M.D., Councilor, New Rockford.

W. C. Nolte, M.D., Delegate, Stutsman County.

M. MacGregor, M.D., Ex-President, Fargo.

E. L. Goss, M.D., Delegate, Tri-County.

Syver Vinje, M.D., Delegate, Traill-Steele Counties.

Andrew Carr, M.D., Councilor, Minot.

P. G. Arzt, M.D., Delegate, Stutsman County.

G. J. Gislason, M.D., Delegate, Grand Forks District.

E. M. Ransom, M.D., Councilor, Northwest District.

H. B. Huntley, M.D.; Delegate, Cass County.

G. F. Drew, M.D., Councilor, Devils Lake.

John Crawford, M.D., 2d Vice-President, New Rockford.

C. S. Jones, M.D., Delegate, Williston.

H. H. Healey, M.D., Committee, Grand Forks.

V. J. LaRose, M.D., Committee, Bismarck.

James Grassick, M.D., Ex-President, Grand Forks.

The President and the Secretary.

The President appointed Drs. Arzt and Ransom to serve as a Committee on Credentials, and explained that Dr. A. J. McCannel, who was elected Secretary at the 1926 meeting, had moved away from the State, and that Dr. J. G. Lamont, San Haven, had been appointed by the Council to serve *pro tempore* in his place.

Dr. J. G. Lamont read the minutes of the last meeting, which, upon motion regularly carried, were approved as read.

**REPORT OF SECRETARY**

Dr. J. G. Lamont presented the following report:

To the President and House of Delegates  
North Dakota State Medical Association  
Gentlemen:

The present report can be nothing but supplemental to the very excellent reports given in previous years by the efficient retiring secretary of



this Association, Dr. Alex J. McCannel, who removed in July, 1926, to Oregon. The secretarial history of 1927 has been one of fraternal helpfulness from the officers of the State Association and from the Secretaries of the District Societies.

The Association closes its fiscal year with a gain in membership. The membership of the last annual meeting was 387, the present membership is 389. Although some of the Districts have been rather slow in submitting the reports of membership and new officers, the lines of communication have been reasonably active between the State Association and its component societies, and the general report to the A. M. A. this year can be made with completeness.

Societies reporting a gain in membership are:

Devils Lake	Kotana
Southwestern	Stutsman
Stark County	Traill-Steele

Societies reporting a loss of membership are:

Cass County	Tri-County
Northwestern	Southern

#### Sixth District

There were no changes in the membership of:  
Richland County      Grand Forks Society

#### Sheyenne Valley

As formerly, there are fourteen component societies. In one or two instances, where the societies are small and closely located, it might be best to combine forces with the hope of securing a more regular attendance and better meetings.

The present status of group insurance indicates that 133 policies are in force in the State Association. Analysis given in March, 1927, accredits 94 to the eastern section, 16 to the central district and 23 to the western division. The difference in amount carried is, of course, accounted for by the zoning plan of assessment.

The acting secretary has been unable to follow closely the plan previously formed of visiting the District Societies. We believe that a well arranged system of State Association officers at meetings in the Districts would bring about a closer co-operation between the doctors of our Association.

THE JOURNAL-LANCET has expressed itself anxious to publish all medical news, especially reports of Society meetings. Local secretaries have used this opportunity to secure publication of their programs. It would be well to have a better arranged plan of collecting and forwarding medical news at stated intervals.

At the A. M. A. Headquarters in November, 1926, was held a very interesting conference of State Secretaries. Splendid inspirational talks were given by the president of the American Medical Association and other officers of prominence. This annual meeting is arranged for the purpose of establishing personal contact between the A. M. A. and the different State units, and is intended to be of help to the State Associations generally. An excellent address was given by Dr. Morris Fishbein, editor of the *Journal of the A. M. A.*, upon the formation of State programs. The periodic health examination was again stressed as a factor in constructive medical endeavor.

It may be permitted to conclude this report by stating that the North Dakota Medical Association

ends the present fiscal year with an excellent working membership and opens the present conference with one of the best programs in scientific medicine that has been presented in the history of the Association. These factors should produce a splendid annual meeting and an eminently satisfactory year in 1927-1928.

Upon motion regularly carried the report was accepted as read.

### REPORT OF THE CHAIRMAN OF THE COUNCIL

THE PRESIDENT: The Chairman of the Council has been quite ill. Has Dr. Williamson any report to make?

DR. WILLIAMSON: I have been acting as Secretary of the Council, but the Chairman has not much to report at this time. Dr. Smyth has sent in his report as Councilor of the Sixth District, which is as follows:

#### REPORT OF THE SIXTH DISTRICT

The Sixth District has held regular meetings at Bismarck and has had many interesting talks from outsiders, as well as clinics by the resident members.

The number of members in good standing is 48; two members failed to pay dues, and are not in good standing. There are 14 physicians practicing in the district who are not members.

The attendance at all meetings has been good and much interest shown. The good attendance is partly attributed to a rule making attendance compulsory at a certain percentage of the meetings.

F. R. SMYTH, M.D., Councilor

Dr. G. M. Williamson presented the following report as Councilor of the Grand Forks District:

#### REPORT OF THE THIRD DISTRICT

The Secretary of the Grand Forks District Medical Society reports 62 members.

Regular monthly meetings are held with a fair attendance, mostly of men living in Grand Forks, where the meetings are held. Hospital staff meetings have had more or less influence on the attendance and programs in connection with meetings of this Society.

The Society had the honor of entertaining Dr. Wilfred Grenfell, Labrador, at a dinner during February, and Dr. J. J. Walsh, of New York, during April—Both gentlemen gave very interesting addresses.

There are 75 men in this District in active practice, while our membership is reported as 62, some who are not on the register as members belong to adjoining Societies. I suggested a year ago that some arrangement should be made whereby men living in a given District where it is more convenient for them to belong to a neighboring Society should be reported to the Secretary of the Society in whose territory they live. In that way a more correct record could be kept.

Two members have been lost to our Society, by death, since our last meeting, Dr. D. D. Westeen and Dr. O. T. Peterson.

This Society has a good staff of officers, who work faithfully to give the membership interesting meetings.

I think arrangements should be made for men to attend the District meetings which are most conveniently located for them.

G. M. WILLIAMSON, M.D., Councilor

Dr. Paul H. Burton presented the following report of the Cass County Medical Society:

#### REPORT OF THE FIRST DISTRICT

Officers elected in 1927 were: Dr. Howard B Huntley, President; Dr. W. F. Baillie, Vice-President; and Dr. T. H. Lewis, Secretary and Treasurer; Censors: Dr. MacGregor, Dr. Moore, and Dr. Heimark.

The Society had eight regular meetings and two special meetings.

Those appearing on the program were: Dr. Cooper, of New York; Dr. Myers, of Minneapolis; Dr. Schneider, of Minneapolis; Dr. Hilding Berglund, of Minneapolis; Dr. Thomas Mulligan, of Grand Forks; Dr. Wallace Cole, of St. Paul; Dr. W. H. Long, Dr. W. C. Nichols, Dr. Arne Oftedal, Dr. Sverre Oftedal, Dr. G. A. Larson, Dr. L. J. Evans, and Dr. Christenson, of the North Dakota State College, of Fargo.

There are sixty-three regular members and five associate members. Number of physicians in the district who are non-members is eight. Number of deaths, one, which was Dr. K. A. Wadel, of Fargo. Members who have withdrawn from the Society because of quitting practice, one; members who have withdrawn for other reasons, two. There are four new members.

P. H. BURTON, M.D., Councilor

Dr. Charles MacLachlan supported the opinion of Dr. Williamson in regard to members being allowed to attend the District meetings that were most convenient, and presented the following report from the Tri-County Society:

#### NINTH DISTRICT

Herewith is submitted a report of the activities of the Tri-County Medical Society for the year prior to January 1, 1927.

Number of meetings, eight; at Carrington, three; at Fessenden, two; at New Rockford, two; at Harvey, one.

At the February meeting at New Rockford ten members were present. At the April meeting at Fessenden eight members and four visitors were present. At the May meeting at Carrington seven members were present, and Dr. A. J. McCannel, who gave two interesting case reports from his U. S. Army experience. These were reported in full in THE JOURNAL-LANCET. At the July meeting at Fessenden, eight members and one visitor were present. At the September meeting at New Rockford, fifteen members and eight visitors were present. Dr. A. C. Cooper, of New York, gave a talk on "Birth Control." Dr. J. G. Lamont, Superintendent of the Sanatorium at San Haven, was present by invitation and gave an interesting address on tuberculosis, presenting a number of skiagrams of chests made from patients resident at

the sanatorium. At the October meeting at Harvey, seven members were present, and the same number attended the November and December meetings at Carrington.

At the December meeting the following officers were elected for the current year: Dr. H. A. Owenston, Grace City, President; Dr. R. J. Critchfield, Fessenden, Vice-President; Dr. H. Van de Erve, Carrington, Secretary-Treasurer; Dr. Edwin L. Goss, Carrington, Delegate; Dr. R. J. Critchfield, Fessenden, Alternate; Drs. I. D. Clark, R. W. Meadows, and D. W. Matthaei, Censors.

The 1927 roster of members is as follows: Charles MacLachlan; I. D. Clark; John Crawford; Edwin L. Goss; R. W. Meadows; J. Roy MacKenzie; H. A. Owenston; H. Van de Erve; D. W. Matthaei; C. R. Tompkins; Peter A. Boyum; Fred Brown; A. E. Donker; A. E. Westervelt; E. C. Gaebe; R. W. Mattson, D. H. McKeague; J. J. Seibel; R. J. Critchfield; R. C. Rasmussen.

Dr. E. Linker was a member in 1926, but dropped his membership for this year. Dr. John Ross MacKenzie, of Carrington, who has been temporarily incapacitated on account of illness, will renew his membership should he resume practice.

The discussion of clinical cases contributes the most interesting feature of our meetings.

CHARLES MACLACHLAN, M.D., Councilor

#### SEVENTH DISTRICT

We have at present a total membership of twenty-three in our local County Society, numbering all the physicians registered and practicing in this county. During the year the following five new members were accepted: Dr. F. F. Lange, Montpelier; Dr. Joseph Sorkness, Dr. W. R. Winn, Dr. H. M. Berg, Jamestown; and Dr. F. F. Lange, Sanborn, who left the Sheyenne District and moved to Jamestown. Two of our former members have moved to other states, Dr. E. J. Hotz to Minnesota, and Dr. F. C. Titzell to Iowa. One of our members, Dr. A. H. Movius, met with an accident last October and passed to the Great Beyond.

We have a fairly good attendance at our meetings, averaging from 80 to 90 per cent of our total membership. A meeting has been held at the end of every second month, usually at Trinity Hospital, preceded by a dinner served at the Hospital. This has tended to make the meetings a little more interesting and has apparently drawn out a larger attendance. Our aim has been to secure some speaker from outside, which has unquestionably served to increase our attendance. As a whole, I believe we have had a very successful year, and I trust that we shall be able to continue this good work.

P. G. ARZT, M.D., Councilor

#### FOURTH DISTRICT

We have a paid membership of fifty-four; a delinquent membership of two; there are thirteen non-members; two have moved away. There has been one death among our members and one among the non-members. We have accepted three new members during the year. We have had seven meetings with an average attendance of twenty-one; nine papers have been read, and twenty-eight clinical cases reported.



In January of this year the two hospitals of Minot offered the use of their dining rooms for our meetings. Since then we have had one meeting each month, always on the last Wednesday, alternating between the two hospitals. They serve us dinner at 6:15, and this plan has been found more satisfactory than our previous plan of meeting in a hotel dining room.

A new fee bill was recently completed and is now in operation. The following officers were elected for the ensuing year: Dr. Frank E. Wheelon, President; Dr. Herbert E. Landes, Vice-President; Dr. A. O. Sinamark, Secretary-Treasurer.

E. M. RANSOM, M.D., Councilor

#### FIFTH DISTRICT

To President Ramstad and the

House of Delegates of the

North Dakota State Medical Association:

The Fifth Council District contains the Sheyenne Valley and Traill-Steele County Societies.

The Sheyenne Valley Society always holds its meetings in Valley City, in connection with a banquet. Our annual meeting was held on January 28, when Dr. E. B. Crosby was elected president, and Dr. Will H. Moore, secretary.

One meeting was called to study and assist in the planning of the Sister's Hospital, the construction of which is now starting. This hospital was reported as a probable fact last year and its erection is a matter of interest to the medical fraternity of the district which it will serve and to the State at large. It will be of mission type, with a capacity of fifty beds and with the Sisters of Mercy in charge.

The last meeting of the Society was held on March 26, on which date Drs. DeKlein and Cole spent the day in Valley City in the interest of the crippled children of Barnes County, this visit being brought about through the local Rotary Club. In the evening following dinner an orthopedic clinic was conducted by these gentlemen. This was a very instructive event.

Our membership stands at eighteen. We lost Dr. A. A. J. Lang through his removal to Jamestown, and gained Dr. R. E. Pray, through his locating in Valley City.

Through the courtesy of Dr. Syver Vinje, I am able to report for the Traill-Steele Society as follows:

The membership is twelve, every eligible man in the district being a member in good standing.

Meetings are held three times a year, usually at Mayville, a most central point. The interest and attendance is good. The programs are arranged by a committee appointed for each meeting, and usually one or more papers are presented by outside men. The fraternal spirit within the Society is very fine.

The present officers are: Dr. W. H. Cuthbert, Courtenay, President; Dr. M. H. Litman, Hope, Vice-President; Dr. Syver Vinje, Hillsboro, Secretary-Treasurer; Drs. R. C. Little, C. A. Hjelle, and Bernt Odegaard, Censors.

Respectfully submitted,

F. L. WICKS, M.D., Councilor

On motion regularly carried this report was accepted.

#### KOTANA MEDICAL SOCIETY

The first meeting of the year of the Kotana Medical Society was held on May 16, at Williston.

At this meeting all the old officers were re-elected, and Dr. Ira S. Abplanalp, of this city, was elected Delegate to the State convention at Grand Forks.

All members are in good standing for this year, having paid their dues at this meeting.

Dr. D. J. Halliday has moved from Grenora to Kenmare, and is now out of this District. The only physician in this District who is not a member is Dr. Hoftal, who has recently started practice at Ray, North Dakota.

This Society has held only three meetings this year. The meetings were well attended and at each meeting papers were read by two members. Owing to the fact that I was absent from the city for four months during the year, and that Dr. Scott, of Ray, received a very painful injury to his back late last fall, which made it almost impossible for him to ride in a car, not as many meetings were held as would otherwise have been. The impassable condition of the roads during the winter months made it almost impossible for the members from outlying towns to attend meetings.

Dr. Scott, who was re-elected president, was very hopeful that this year the Society would hold more meetings and that they would be better attended. From the apparent enthusiasm of all the members present at this meeting, we hope that Dr. Scott's opinion will be justified.

CARLOS S. JONES, M.D., Councilor

#### SECOND DISTRICT

The past year has been very successful for the Devils Lake District Medical Society. Our membership has increased from twenty-seven to thirty-two members. This increase was due to new men in the District, three, and one reinstatement, and one new member who had belonged to the Tri-County Society, although living in our District.

We had four meetings, the last of which was exceptionally interesting. There were thirteen members and three visitors in attendance. Dr. J. H. Moore, of Grand Forks, and Dr. J. D. Graham, of Starkweather, read papers on "Obstetrics," which brought out a very interesting discussion. The meeting was preceded by a banquet at seven o'clock. I would like to suggest to other Societies that they have their banquet as their evening meal before the meeting instead of serving a lunch after the meeting. We have found this a much better plan. Each man pays for his own plate in order to save the Society funds for scientific purposes, such as bringing in outside talent.

I think it is encouraging to see the membership increase while the members of the profession are getting fewer. We have only seven non-members in our District while a few years ago we had twenty. We have had no deaths or disagreements in our District.

G. F. DREW, M.D., Councilor

DR. WILLIAMSON: In all the Council reports there seems to be a certain number of men in the Districts who do not belong to the Society. When men are taking examinations for license

I always urge them to lose no time in becoming members of their local Society. This is a very important item and I do not think it is generally appreciated. The Examining Board in this State pays a lot of attention to this, and we always ask this question of every applicant. If they have not been members of their local Society where they have lived, there is some reason for it. I wish all the men would keep this in mind and urge upon all new men in the state that they join their local Society. I think there are about 500 men practicing in the state, and while we have about 400 members we should have more.

I move that these Councilor reports be accepted as read.

Motion seconded and carried.

#### REPORTS OF STANDING COMMITTEES

The Secretary presented the following report of the Committee on Public Policy and Legislation, which had been sent him by Dr. V. J. La Rose:

#### REPORT OF THE COMMITTEE ON PUBLIC POLICY AND LEGISLATION

Your Committee was successful in obtaining the services of a layman who has had considerable experience with public health and such medical matters as are of interest to the general public. Although serving as a full-time representative in another capacity, he found time to keep in touch with all proposed legislation, beneficial or detrimental, which would be of interest to your Committee. This information immediately placed at our disposal enabled us to take early action for or against the measure as the case might be.

House Bill No. 231 was the only bill introduced which required vigorous opposition by your Committee. This bill was drawn along the same lines as former bills introduced at every session for the past ten years in that it sought to compel every public hospital in the state to open its doors to every licensed practitioner of medicine, regardless of his qualifications, and, in addition, all chiropractors were to be admitted as members of the hospital staff. Refusal on the part of the hospitals to comply with these demands would penalize them by placing them on the tax list. It is needless to state that this bill was strongly backed by "The League of Medical Freedom."

Your Committee immediately communicated with the Secretaries of all component societies, superintendents of all hospitals in the state, and many members of the State Association, urging them to communicate with legislative representatives from their respective districts asking that they oppose the passage of the bill. Superintendents of several of the larger hospitals throughout the state made a hurried trip to Bismarck to appear before the judiciary committee in order to state their objections to the bill. The principal one was that numerous court decisions held that the hospital management is responsible legally and financially for the

acts of its agents, which includes the doctors practicing therein. If this bill became a law the hospital management would lose control of the personnel of the hospital staff and thus be deprived of the power to protect their patients against incompetent medical or cult practitioners. Patients contracting contagious disease from the patient of the cultist who did not believe in germs could hold the hospital financially responsible.

Your Committee wishes to take this opportunity to give credit to the intelligent majority of legislators who, when the bill was explained to them, saw at once the injury and injustice our hospitals might suffer if such a law was passed. We wish again to emphasize that we have found every legislator willing and even anxious to discuss bills, especially those pertaining to medical legislation, which are often very confusing to the lay mind. Never at any time were we refused polite audience and respectful attention when we requested the privilege of an interview.

We have stated on many occasions before that there would be little difficulty in obtaining medical and health legislation if public opinion could be sufficiently aroused in matters pertaining to the health of the public. The members of our State Association should seize every opportunity to explain to the public that medical and health legislation is for their benefit and is not "some graft of the doctors."

Your Committee wishes again to repeat that all proposed legislation should be brought before the State Association for approval at its annual meeting, when it may then be referred to the Legislative Committee. The knowledge that a proposed measure has the entire State Association back of it carries considerable weight and makes it much easier for the Committee to gain recognition.

The Basic Science Law passed by many States, and by Minnesota this past year, does much to regulate the licensing of graduates of different schools and cults who claim to practice the healing art. It should be passed in North Dakota and will no doubt be brought before the next session of the legislature. This law can be passed if members of our State Association will become familiar with the advantages of such a law, so that it may be explained to legislative representatives and to the public. Interest yourselves sufficiently to become acquainted with representatives from your District, not only during the session, but throughout the year. Cultivate an acquaintanceship which will give your representative confidence in your friendship so that he may feel free to come to you for advice on medical legislation, or when you go to him or write him regarding bills pertaining to health and medical legislation he will be glad to have your interest and help.

V. J. LA ROSE, M.D.

W. H. PORTER, M.D.

PAUL H. BURTON, M.D.

Committee on Public Policy  
and Legislation.

Dr. Mulligan moved that the report be accepted and that the men who so successfully handled these matters receive recognition in an



individual letter signed by the President and Secretary of the Association.

Motion seconded by Dr. Kent E. Darrow and unanimously carried.

Dr. Williamson called attention to the Basic Science Law and expressed doubt as to whether this should come up in two years or not. He believed that finally there would be a standardized law of this character. The laws now in force in different states have met with considerable criticism, and he felt that the matter should be studied carefully and thoroughly investigated before being brought to the attention of the legislature in order that a proper law might be formulated. He thought it would be well to have a report at the next annual meeting of the Association on what had been found out.

Dr. G. M. Williamson presented the following report of the Committee on Necrology, which had been submitted by the Chairman, Dr. F. R. Smyth:

#### REPORT OF THE COMMITTEE ON NECROLOGY

The following is a list of members of our Association, and practicing physicians of the state, who have answered their last call since our last annual meeting:

##### DR. O. T. PETERSON, Minot

Dr. Peterson was a graduate of the University of Illinois, College of Medicine, 1893, and was licensed to practice in this state in 1896. He located at Northwood, where he remained for several years, but moved to Minot and practiced there until his death, in July, 1926, from nephritis.

Dr. Peterson was well known throughout the Northwest and reputed to be a skillful surgeon, having many warm friends among his patients.

##### DR. KRISTIAN A. WADEL, Fargo

Dr. Wadel was a graduate of Bellevue, 1898. He died September 23, 1926, but no further details have been furnished.

##### DR. ERIC T. SHERPING, Wyndmere

Dr. Sherping was a graduate of the Minneapolis College of Physicians and Surgeons, 1900. He was licensed in North Dakota the same year, and died in October, 1926. He is not listed as a member of our Association.

##### DR. ALFRED H. MOVIUS, Jamestown

Dr. Movius was a graduate of the University of Illinois, College of Medicine, 1906, and was licensed to practice in North Dakota in 1909. He located in Jamestown and was associated with his friend and classmate, Dr. W. W. Wood. Dr. Movius was a member of the local, State and American Medical Associations, and always took an active part in professional and civic matters. A local newspaper truly said, "His work is his monument."

He met with a tragic death by the fall of an aeroplane in which he was traveling from Minneapolis to Jamestown.

##### DR. ADOLPH O. AAKER, Minot

Dr. Aaker was a graduate of the University of Illinois, College of Medicine, 1907, and was licensed to practice in North Dakota in 1908. He died January 28, 1927, aged 49. He practiced in Velva for eighteen years and during that time became well known and much esteemed. In addition to being a skillful physician, Dr. Aaker was a talented musician and had written many compositions. On the day of his death he had been leading the music at the funeral of a friend in Velva, and when hurrying to catch a train home, fell on the station platform and died a few hours later.

##### DR. ALEXANDER J. JAMESON, Sentinel Butte

Dr. Jameson was born in 1864. He graduated from the College of Physicians, Indianapolis, in 1888, and was licensed to practice in North Dakota in 1902. He died February 21, 1927, of peritonitis and appendicitis. He was not listed as a member of our Association.

##### DR. ANDERS ALBERT WESTEEN, Grand Forks

Dr. Westeen was born in Sweden, July 22, 1860, and died in Grand Forks, September 26, 1926. With the passing of Dr. Westeen the profession of medicine in North Dakota lost one of its best known and most influential members. He was exceptionally well qualified for his life's work. He received his literary education at Gustavus Adolphus College, St. Peter, Minnesota, and at Augustana College, Rock Island, Illinois, where he received his Bachelor of Science degree. His medical education was pursued at Ann Arbor, Michigan, and the University of Minnesota, where he graduated in 1893. In addition, he took many and varied postgraduate courses, both at home and abroad. His day's work was done at Grand Forks, North Dakota, where he practiced his profession for thirty-three years. He was an excellent student and was generally regarded as one of the best posted men on medical and surgical subjects in the state. He was public spirited, took a keen interest in the affairs of the community, and gave of his time and talents freely for the welfare of humanity. Dr. Westeen performed his work faithfully and thoroughly and most abundantly earned the esteem in which he was held.

##### F. R. SMYTH, M.D., Chairman

Dr. Kent E. Darrow moved that the report be adopted and spread upon the minutes.

Motion seconded and unanimously carried.

THE PRESIDENT: I talked with Dr. Smyth last evening and he told me it had been a very difficult task for him to obtain information in regard to deceased members. I think it might be well if some plan could be arranged whereby any newspaper comment or other information might be sent to the Chairman of the Committee on Necrology.

## REPORT OF THE COMMITTEE ON PUBLICATION OF MEDICAL HISTORY

House of Delegates,

North Dakota State Medical Association.

Gentlemen:

Your Committee reported at the 1926 annual meeting that 500 copies of "Medical History of North Dakota, Sketches and Abstracts," by Dr. James Grassick, had been published by the Page Printing Company, Grand Forks, the cost of publication being \$1,880.87

This account has been paid as follows:

From collections made by Committee.....	\$1,043.55
Check from State Association.....	800.00
Discount allowed by Page Printing Co.....	37.32

Total .....	\$1,880.87
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To date there have been sold Histories and electrotypes amounting to.....	\$1,265.50
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From which the Committee has paid:

Page Printing Company.....	\$1,043.55
Postage .....	48.79
Remitted on purchase of books.....	17.50
Remitted to treasurer, W. W. Wood, M.D. ....	150.00

Total .....	\$1,259.84
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Cash in Northern State Bank.....	5.66
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Total .....	\$1,265.50
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Inventory:

143 books on hand at \$3.50.....	\$ 507.50
2 books unpaid at \$3.50.....	7.00
Cash in Northern State Bank.....	5.66

\$ 520.16

You will note that \$150 has been remitted to our treasurer since the payment of \$800 to the publishers, so that the actual cost to the Association to date is but \$650.00.

The inventory shows that we have assets in books and cash on hand amounting to \$520.16, leaving the cost of this History to the Association when all books are sold to be \$129.84.

The Committee is of the opinion that if the various component societies were interested in promoting the sale of the remaining volumes we would have the account closed before our next annual meeting. We would respectfully suggest that this matter be brought to their individual attention by the Secretary of the State Medical Association.

When we consider the character of the undertaking, the increasing importance and value of the data as the years go by, and the necessary care, time, and work that were so freely given by those having the matter in hand, the Committee is of the opinion that the Association should consider itself extremely fortunate in having such a piece of constructive work at so small a financial outlay.

The Committee wishes to acknowledge the fine spirit of appreciation that has been so generally expressed by the Fellows for the work that has been done. It is worthy of record that of all who have subscribed for the History only two have defaulted in payment, a splendid tribute to the integrity of the members of our profession.

The Committee has had frequent requests from libraries, medical associations, and other organizations for complimentary copies of the History. It would suggest that authority be given to use its judgment as to when such requests shall be granted.

G. M. WILLIAMSON, M.D.

JAMES GRASSICK, M.D.

H. G. WOUTAT, M.D.

Dr. Williamson explained that he had used every effort to get the two delinquents to pay for their copies of the History, but they had persistently refused. He thought they should be made to pay the \$3.50 before being admitted to membership in their District Society. While the History was valuable at present he felt sure that its value would increase as time went on, and it had been suggested by Dr. Lamont that a permanent Committee be appointed to keep the History up to date from year to year.

Dr. Darrow asked if Dr. Williamson could give the secretaries of the component societies a list of those who had copies of the History so that the officers could again call the attention of the members to the book and perhaps sell some copies.

Dr. Healy asked how many libraries had the book on file at present.

Dr. Williamson replied that there were six or seven.

Dr. Healy expressed the opinion that each local society might buy a copy of the book and donate it to the different libraries throughout the country where they would be cared for.

THE PRESIDENT: This book is one of the best things of the kind that has ever been brought out, and I know the men who have them will prize them more and more as time goes on. There are new members being added to the various societies right along, and I am sure there will be no difficulty in disposing of the remaining volumes. I think the suggestion in regard to the establishment of a permanent Committee on History is excellent. That should be left to the incoming administration, but I think it is important and it should be acted upon before the House of Delegates adjourns.

Dr. Paul H. Burton moved that Dr. James Grassick be made Chairman of a permanent Committee on History and that he select his own Committee.

Motion seconded by Dr. W. C. Fawcett and unanimously carried.

Dr. Burton read the following communication from the New York Academy of Medicine, and moved that Dr. Grassick be authorized to send a copy of the History to the Academy:



September 13, 1926.

Dr. James Grassick,  
Grand Forks, N. D.

Dear Dr. Grassick:

We should be very grateful to you if you would present to this library a copy of your book. "Medical History of North Dakota." We have over 100 readers in the library each day and feel sure that your work would serve a useful purpose here.

Sincerely yours,

ARCHIBALD MALLOCH, M.D.  
Librarian

Dr. Fawcett seconded Dr. Burton's motion.

Dr. Darrow amended the motion to the effect that the Chairman of the Committee be allowed to use his discretion in regard to sending complimentary copies to libraries on request. This amendment was seconded.

Dr. Burton accepted the amendment, as did Dr. Fawcett, and the motion as amended was put to a vote and unanimously carried.

#### THE WETZER MEMORIAL

The president asked for a report from a Special Committee on the Wetzter Memorial, but Dr. Arzt stated that there was no report at this time.

Dr. James Grassick presented the following report of the Committee on Tuberculosis:

#### REPORT OF THE COMMITTEE ON TUBERCULOSIS

House of Delegates,  
North Dakota State Medical Association.

Your Committee on Tuberculosis begs to report as follows:

The last legislature, recognizing the crowded condition of the State Sanatorium and the large waiting list that has been so much in evidence in the past, made very liberal appropriations for increasing the facilities for caring for the tuberculous of the state. Their generosity in sensing the situation and dealing with it so magnanimously is worthy of our high regard. If the plans now under way do not miscarry the Children's Building with a capacity of forty patients should be completed by September of the present year, while the new Infirmary Building with a capacity for sixty patients should be ready for occupancy some time in 1928.

The North Dakota Tuberculosis Association, in conjunction with the State Department of Health, has carried on a campaign of Health Education which we believe is fundamental in the control of any disease, and especially so in tuberculosis where social and economic conditions are such important factors. It is worthy of record that we are making some progress. Twenty-five years ago tuberculosis was rated first as a cause of death, while today it takes fifth place in the scale. The fine spirit of co-operation shown by the members of the medical

profession is everywhere in evidence and is much to be commended.

Respectfully submitted

J. G. LAMONT, M.D.  
FANNIE DUNN QUAIN, M.D.  
JAMES GRASSICK, M.D.  
Committee

Dr. Darrow moved that the report be accepted as read.

Motion seconded and unanimously carried.

Dr. Charles MacLachlan moved that Dr. F. R. Smyth, of Bismarck, be made an honorary member of the Association, and that he be notified by the Secretary of this action.

Motion seconded by several and unanimously carried.

Dr. Williamson suggested that this action be reported before the Association in open session so that all the members would understand. He felt that no man was more worthy of this recognition than Dr. Smyth.

THE PRESIDENT: Another past-president of the Association is very ill, a man whom we all regard highly and look upon as a friend. He is very ill, and I believe a similar honor would be appreciated by Dr. V. H. Stickney, of Dickinson.

Dr. MacLachlan moved that Dr. Stickney's name be presented to the Society in open session for this honor on Wednesday.

Motion seconded and carried.

Dr. James Grassick presented the following resolution:

#### HONORARY MEMBERS

WHEREAS, our honored Fellows, past-presidents of our Association, to wit, Dr. F. R. Smyth, of Bismarck, and Dr. V. H. Stickney, of Dickinson, are unable to sit with us at the Council table during the present session,

BE IT RESOLVED, that we send to each of them individually a bunch of spring blossoms with a message expressing our deep regret that they were unable to be with us, and our sincere wish that the light may break through the clouds and cast a flood of sunshine, hope and cheer over their lives.

Dr. Darrow moved the adoption of this resolution.

Motion seconded and carried.

#### MISCELLANEOUS BUSINESS

The Secretary presented a communication from the Chairman of the Bureau of Legal Medicine of the American Medical Association, and moved that the matter be referred to the Committee on Public Policy and Legislation for action.

Motion seconded and carried.

The Secretary then presented a communication from Dr. G. P. Stokes, of Streeter, regarding a course on practical medicine and hygiene in the High Schools of the State and moved that it be referred to the Committee on Medical Education.

Motion seconded and carried.

Dr. Stackhouse: Last fall our local Society attempted to do something to increase the attendance at our meetings, and formulated a by-law that all members must attend at least 50 per cent of the meetings or be dropped from membership. The first of the year eight or ten were dropped. They immediately filed applications for membership again and all were accepted except two. I think the Secretary of the State Association has received a letter from one of these men. This action has increased the attendance markedly, and there is very little complaint about the by-laws, even from members living at some distance. Some of the officials of the American Medical Association have written us in the last month and said they did not think this procedure was quite regular. If the House of Delegates decides that it was not regular we will change it.

THE PRESIDENT: Last evening the president of the Sixth District Medical Society and I consulted with Dr. Smyth, who is Councilor for our District, and we worked out a plan whereby we believe that this matter can be solved locally provided the House of Delegates wants to report it back to us for action. The American Medical Association has ruled that it is not a constitutional procedure, and I doubt if it would be accepted by them.

Dr. MacLachlan stated that the same thing had happened once before and that the matter was referred back to the local society. If they found that the by-law was not in accord with the rules of the American Medical Association it could be changed.

THE PRESIDENT: This is a rather important matter for one of the members who failed of re-election. He is on the Board of one of the hospitals at home and that hospital requires that a man must be a member of our local Society before he can serve on the hospital staff. He will be automatically dropped if he is not re-instated in the Society. Another matter is that he will be unable to obtain malpractice insurance if he is not a member of the local society. We

also have a letter regarding Dr. Bunting, of Mandan, from the Aetna Life Insurance Company, asking if he was expelled or suspended. It is a matter of considerable importance to both of these men.

DR. W. C. NOLTE: I am interested in this By-Law and think it is a good plan if it can be worked out to meet the requirements of the American Medical Association. I think no society wants parasites on the membership list, but if the men wish to come back and take active part they should be re-admitted.

Dr. Paul H. Burton moved that the House of Delegates refer this matter back to the local society for action.

Motion seconded.

Discussed by Dr. Darrow, who thought some definite action should be taken instead of referring the matter back to the local society.

Dr. MacGregor thought the House of Delegates could not take any action on it, as it was a matter purely of local interest. Dr. J. P. Aylen agreed that the matter rested entirely with the local society. If a member was expelled from his local society he should be given a proper hearing, but the House of Delegates is not a trial board. If it was asked for an opinion by the local society as to the constitutionality of the By-Law it could give an opinion, but this would not be worth anything, and the matter would have to go to the American Medical Association.

Dr. J. O. Arnson stated that the action was taken to rid the Society of several undesirable members, which it very promptly did. In order to be sure of their ground he wrote the Chairman of the Council of the Aberdeen Medical Association and received a communication saying that the action was not legal. He thought the local society now realized its mistake and that the matter could be handled satisfactorily by it without any action by the House of Delegates.

President Ramstad read that portion of the Constitution regarding membership in local societies.

Dr. Burton's motion to refer the matter back to the Sixth District Medical Society was then put to a vote and unanimously carried.

Dr. Mulligan moved to adjourn, to reconvene at the luncheon hour on Wednesday.

Motion seconded by Dr. Burton and unanimously carried, and the House of Delegates adjourned at 10:40 P. M.



## SECOND MEETING—WEDNESDAY, JUNE 1, 1927

The second meeting of the House of Delegates was called to order at the Hotel Dakota, Grand Forks, on Wednesday, June 1, 1927, at 12:45 p. m., by the President, Dr. N. Oliver Ramstad, Bismarck.

The Secretary called the roll of Delegates and Councilors and the following responded:

G. M. Williamson, M.D., Councilor, Grand Forks District.

Paul H. Burton, M.D., Councilor, First District.

J. O. Arnson, M.D., Delegate, Sixth District.

Thomas Mulligan, M.D., President-Elect.

John Crawford, M.D., 2d Vice-President.

William W. Wood, M.D., Treasurer.

G. F. Drew, M.D., Councilor, Devils Lake District.

E. M. Ransom, M.D., Councilor, Northwest District.

F. L. Wicks, M.D., Councilor, Valley City.

P. G. Arzt, M.D., Councilor, Stutsman County.

Charles MacLachlan, M.D., Councilor, New Rockford.

J. W. Bowen, M.D., Councilor, Dickinson.

Kent E. Darrow, M.D., Delegate, Cass County.

G. J. Gislason, M.D., Delegate, Grand Forks District.

H. M. Erenfeld, M.D., Delegate, Northwest District.

W. F. Sihler, M.D., 1st Vice-President.

Andrew Carr, M.D., Delegate, Northwest District.

E. A. Pray, M.D., Delegate, Valley City.

C. E. Stackhouse, M.D., Delegate, Sixth District.

Syver Vinje, M.D., Delegate, Traill-Steele Counties.

H. E. French, M.D., Committee, University.

A. A. Whittemore, M.D., Committee, Bismarck.

W. C. Nolte, M.D., Delegate, Stutsman County.

James Grassick, M.D., Ex-President, Grand Forks.

John H. Rindlaub, M.D., Ex-President, Fargo.

Rolfe Taintor, M.D., Ex-President, Fargo.

W. C. Fawcett, M.D., Ex-President.

The President and the Secretary.

#### REPORT OF DELEGATE TO AMERICAN MEDICAL ASSOCIATION

Dr. E. A. Pray, Valley City, presented the following report:

Members of the House of Delegates of the North Dakota State Medical Association:

It is a great pleasure to be able to give you a report of the Washington meeting of the American Medical Association for 1927, inasmuch as to me it seemed in many ways to have been the best meeting that I have attended as your representative in the House of Delegates.

This was largely a gathering for functions, but they were so much worth while that one could not regret using a part of the time in this way. The speech of President Coolidge at the opening session was interesting and splendid, giving credit as he did to the profession for the great advances that have taken place for the better health of the whole human race.

The opening address of Dr. Warnshuis, Speaker of the House of Delegates, contained the following: "Honorable Calvin Coolidge,

President of the United States:

"The American Medical Association, representing

94,000 doctors of medicine, convened in annual session, extends cordial greetings to you. We affirm anew the fundamental principles and objects of our profession. We subscribe again our willingness to contribute our services for accredited humanitarian purposes. We pledge a continuance of persistent efforts to unfold the unknown laws of physiology and hygiene and to uncover the causative factors of disease.

"We are ever ready to apply approved scientific principles and practices to enhance the health of our people that their vocational and social pursuits may be attended by a minimum of disease and physical capacity.

"In this spirit we convey to you, Mr. President, our greetings and felicitations.

"The American Medical Association,  
OLIN WEST, Secretary."

The President's speech was, in a way, a reply to this memorial.

The address of the President of the Association, Dr. Wendell C. Phillips, dealt most strenuously with the assumption of Congress that it had a right to dictate to a medical man what drugs he should prescribe and in what quantities, referring of course to the act of the Supreme Court in which it upheld by a vote of five to four the right of Congress to limit the practitioner to prescribe for a patient more than one pint of liquor in ten days. From the interest shown and the indignation expressed it would seem to me that a very active canvass will be made to determine the attitude of a candidate for Congress before his election.

President-Elect, Dr. Jabez N. Jackson, laid special stress upon the need for greater attention to medical ethics.

A survey has been made to determine the need of a fund to care for aged and disabled medical men and their families. It seems that an effort has been put forth to prevent any such action being carried into effect.

The fight is still on for a shorter course for the preparation for medicine, headed by Dr. William Allen Pusey. It evidently will die a bornin'.

Nurses and their education causes a lot of worry. I do not count it worth the candle in the time it takes for argument.

This Washington meeting showed the difficulty any city has in entertaining such a mass of visitors. The auditorium is so constructed that the exhibits were cut up and it was difficult to find any certain spot without a guide book. Hotel accommodations were used up ten days before the meeting.

Minneapolis is to have the next session, and I wish to impress upon all of you the opportunity this gives for an easy attendance. Each year makes for better and greater benefits and is a revelation to a member who has never registered. The registration this year was 6,273.

I wish you might have enjoyed with me the wonderful ceremony at the Tomb of the Unknown Soldier, in memory of those of the profession who died in the service during the late war. Beautiful Arlington Cemetery—a clear sky—excellent music by the U. S. Marine Band—a speech from the Ambassador from Belgium and another by the Chief

of Staff of the U. S. Army—the long procession—the placing of the wreath, amidst most solemn surroundings—a scene I shall never forget.

Respectfully submitted,

E. A. PRAY, M.D., Delegate

On motion regularly carried this report was accepted as read.

Dr. H. E. French, Chairman, presented the following report:

#### REPORT OF COMMITTEE ON MEDICAL EDUCATION

To the House of Delegates of the  
North Dakota State Medical Association:

Your Committee feels that its jurisdiction covers three fields: First, under-graduate medical training, or the School of Medicine at the University; second, graduate training for physicians; third, popular health education.

In regard to the first, conditions are fairly satisfactory. The School continues on the basis well known to you. It continues to enjoy high rating. Its graduates transfer to other schools to good advantage; for example, this year of twenty-four men now seeking advanced standing in clinical schools, all but five are already placed, eleven at Rush Medical College, four at Northwestern University Medical School. Compelled to limit its classes to about twenty-five or thirty each, the School is able to care for all residents of the state who apply and who have the necessary qualifications, and it has room for a few others. It must reject many applications from a distance. While its minimum requirements for admission are the well-known two years of college work, three-fourths of its matriculants for the last two years have all had three or more years of premedical college work.

The Committee has long wished that it might point the way to bringing graduate medical instruction to the practitioner upon some of the plans in use in several other states. But with lack of funds and with the magnificent distances in the State, together with the fact that the profession is progressive and district societies are already quite alert, the Committee does not yet see its way.

With regard to popular medical or health education, really considerable is being done by various agencies, the State Board of Health, the State Tuberculosis Association, the School of Medicine, the Extension Division of the University, etc. No doubt more might and should be done. The Committee would renew its recommendation of a few years ago, that district societies and individual physicians consider placing subscriptions to *Hygiea* in schools and public libraries. A letter from Dr. P. G. Stokes to the president of the Association regarding a plan for a more definite course in hygiene and sanitation in high schools and Dr. Ramstad's reply, referred to the Committee yesterday, will be given careful consideration.

H. E. FRENCH, M.D.

On motion regularly carried this report was accepted as read.

#### REPORT OF COMMITTEE ON PUBLIC HEALTH

To the House of Delegates of the  
North Dakota State Medical Association:

The State Health Department is now organized and equipped with a personnel of three directors of divisions and four clerks. This is merely enough to keep up with our routine work and to hold the progress of the last few years.

Medical men of the state are very favorable to public health in general. The Department gets splendid moral support from every member of the profession. The local health officers now have a clear public health vision and are wonderfully co-operative.

The organized civic bodies are now a potent force in all public health matters, and if we, as medical men, are to maintain our prerogatives as leaders, our active interests will have to be stimulated in some way. These lay activities make a powerful machine for either good or evil. What shall we do to direct it into proper channels?

The Sheppard-Towner Act, whereby the Federal Government is able to finance our Child Hygiene Bureau under Dr. Williams, will run out at the end of this biennial period. Some organized effort should be made to induce the State to take over the support of this very important work. This State cannot afford to neglect to utilize the foundation already laid by Dr. Williams in her infancy and maternity work.

The last Legislature appropriated \$40,500 to the Department for the current biennial period. This is 3c per capita and places this State 47 in rank. We asked for \$85,000, which would have been 6c per capita. The average over the United States is 9c. This is absolutely necessary for constructive work. We especially asked for support of our sanitary engineering department, without avail.

Our reports on births and deaths are at least 90 per cent correct. They are now bound, serially numbered, and indexed. This index is very valuable but cannot be made available until some legislature gives us enough money to buy filing cases.

Our reports and figures on communicable diseases are not so reliable. We are considerably below the standard of other states in this regard. What can we do to cause the medical men to make these reports?

The Department is now in a position to reciprocate to the medical men for their splendid co-operation by furnishing or gathering special information on many subjects of interest and importance.

During 1925, there were 14,740 births, with a rate of 21.7, and 5,036 deaths, with a rate of 7.4, the lowest in the registration area. There were 382 stillbirths. This is too large a number and offers a prolific field for special study by some one. During the year there were eighty-six maternal deaths, of which about 70 per cent were preventable. Our rate was 5.8. There were 1,038 infant deaths, with a rate of 70.4. Some of our cities have enormous infant mortality rates; others we should all be proud of. There were 298 deaths from accidents, sixty-eight of which were due to automobile accidents. The State Safety Council has been organized to reduce this number. The most prevalent cause of



death was heart disease, with 513 deaths; a close second was cancer, with 383 deaths. There were from 1,800 to 2,000 preventable deaths in North Dakota during the year.

Diphtheria immunization campaigns are quite prevalent, with large responses. We would join most heartily in the National slogan, "No more diphtheria after 1930."

Scarlet fever seems to be our greatest scourge, but we feel that it is not quite time to officially urge wholesale immunization. We believe, however, that this time is fast approaching.

The Board has just sent to the publisher a revision of the old rules and regulations which will no doubt interest you.

This summer we expect to evaluate the health work of the State by the use of the appraisal form devised by the American Public Health Association for rural communities. We ask your co-operation.

#### SUGGESTIONS

We suggest that this organization through its local societies sponsor, or at least study, the advisability of:

1. A law permitting full-time district health departments.
2. A campaign for full-time public health nurses.
3. A law requiring proper refrigeration of biologicals.
4. Medical leadership of lay health activities.
5. Encouraging local campaigns for the immunization of school children against diphtheria.
6. Recommending a standard definition of a "still-birth" and a "live birth" that will be accepted by the medical profession, the legal profession, and the statistician.

I wish to officially announce to you that there has been organized a "North Dakota Health Officers Association," and suggest that there is no reason why they should not consider accepting an invitation to be admitted as a section of this organization.

Respectfully submitted,

A. A. WHITEMORE, M.D., Chairman

W. C. NOLTE, M.D.

H. E. FRENCH, M.D.

Dr. MacLachlan moved the adoption of this report.

Motion seconded by several.

DR. CHARLES MACLACHLAN: As to the question regarding the definition of a "live birth": this has a very important legal significance. I think there are only about sixteen states that have taken a stand on what constitutes a live birth, but this is of very decided legal significance. As I am a member of the committee appointed by the State Board of Health on this matter I would like to have the opinion of the medical men here assembled as to what constitutes a live birth. I have attempted to define this for my own satisfaction. I understand that eleven of the states have gone on record regarding this, but no two of them are of the same opinion. My own idea is that a live birth means the child that is born and brought from the

mother has given a visible effort at respiration.

Dr. George M. Williamson presented two communications which had been received from Dr. F. R. Smyth.

DR. W. C. NOLTE: You probably noted that our State is 47 in rank, and that we have only 3c per capita while the average is 9c through the United States. I wonder if we cannot get back of our Health Commissioner and help him to get an increased appropriation so that a more efficient health program may be carried out.

Dr. C. MacLachlan's motion to adopt the report of Dr. A. A. Whittemore was then put to a vote and unanimously carried.

#### TREASURER'S ANNUAL REPORT

May 21, 1926 to May 31, 1927

##### Assets and Receipts:

Balance General Fund, May 21, 1926 .....\$2,059.10

##### Savings Account:

Interest on Bonds.....\$ 42.50

Interest on Savings..... 32.01

Balance of last year..... 497.62

Liberty Bonds ..... 1,000.00

\$1,572.13 \$1,572.13

Check from Dr. Geo. Williamson

for balance in Grassick Book

Fund .....\$ 150.00

Dues from Secretary..... 2,005.00

Transferred from Check to Savings Account ..... 655.74

\$6,441.97 \$6,441.97

##### Disbursements:

Eighteen (18) Checks Numbered

156 to 173 inclusive.....\$2,865.63

Exchange on Checks..... 3.70

\$2,869.33 \$2,869.33

Balance .....\$3,572.64

##### Distribution of Funds at the Present Time:

General Fund Balance.....\$2,002.75

Savings Account to May 31, 1927..... 1,572.13

(Includes two Liberty Bonds

\$1000.00)

\$3,574.88

Two checks issued but uncashed:

No. 167 G. N. R. R.....\$1.24

No. 160 Postmaster,

San Haven ..... 1.00

\$2.24 2.24

Net Balance .....\$3,572.64

Comparison of this statement with that submitted at last year's meeting shows a reduction of \$35.00 in the amount of dues received. An increase of \$991.21 in expense, and a net decrease of \$642.32 in the balance on hand.

Respectfully submitted,

Wm. W. Wood, M.D., Treasurer

Upon motion regularly carried this report was referred to the Auditing Committee.

The President announced that the Vice-Chairman of the Council had appointed Drs. Arzt and Ransom to serve as an Auditing Committee, and requested them to bring in their report at the next meeting of the House of Delegates.

The President also announced the appointment of the following gentlemen to serve as a Nominating Committee: Dr. C. W. Fawcett, Chairman; Dr. Charles MacLachlan and Dr. C. F. Stackhouse.

Dr. George M. Williamson moved that the House of Delegates adjourn, to reconvene at 12:30 on Thursday in the same room.

Motion seconded and unanimously carried, and the House of Delegates adjourned at 1:30 P. M.

### THIRD MEETING—THURSDAY, JUNE 2, 1927

The third meeting of the House of Delegates was called to order at the Hotel Dakotah, Grand Forks, on Thursday, June 2, 1927, at 12:45 P. M., by the President, Dr. N. Oliver Ramstad, Bismarck.

The Secretary called the roll and the following Delegates and Councilors responded:

Ira S. Abplanalp, M.D., Williston, Kotana Society.  
E. A. Pray, M.D., Delegate, Valley City.  
M. T. Savre, M.D., Delegate.  
Rolfe Tainter, M.D., Delegate, Cass County.  
Kent E. Darrow, M.D., Delegate, Cass County.  
W. C. Fawcett, M.D., Ex-President.  
W. H. Porter, M.D., Committee Public Policy and Legislation.  
W. F. Sihler, M.D., 1st Vice-President.  
Andrew Carr, M.D., Delegate, Northwest District.  
G. F. Drew, M.D., Councilor, Devils Lake District.  
W. C. Nolte, M.D., Delegate, Stutsman County.  
James Grassick, M.D., Ex-President, Grand Forks.  
J. C. Smith, M.D., Guest.  
C. E. Stackhouse, M.D., Delegate, Sixth District.  
E. L. Goss, M.D., Delegate, Tri-County.  
John H. Rindlaub, M.D., Ex-President.  
P. G. Arzt, M.D., Councilor, Stutsman County.  
W. W. Wood, M.D., Treasurer.  
Charles MacLachlan, M.D., Councilor, New Rockford.  
G. M. Williamson, M.D., Councilor, Grand Forks.  
Thomas Mulligan, M.D., President-Elect.  
J. O. Arnson, M.D., Delegate, Bismarck.  
The President and the Secretary.

Dr. James Grassick read the following telegrams:

Dr. James Grassick,  
Grand Forks, N. D.

Please give my thanks to the Health Council for many kindnesses shown and for beautiful bouquet, which was not only a delight but a balm to the afflicted.

F. R. SMYTH

Dr. J. G. Lamont,  
State Medical Association,  
Grand Forks, N. D.

Please convey thanks and appreciation to the Association for message and beautiful token of friendship. My best wishes for a successful meeting of an Association which labors for the welfare of others, and to which I am proud to belong.

F. R. SMYTH

Dr. Grassick moved that the Secretary be requested to write Dr. Smyth, expressing to him the gratitude of the Association for his interest and work in the interest of good health throughout the State.

Motion seconded by several and unanimously carried.

### REPORT OF COMMITTEE ON NOMINATIONS

Dr. W. C. Fawcett, Chairman, submitted the following report:

To the House of Delegates of the  
North Dakota State Medical Association:

Your Committee respectfully recommends the following:

For President—Thomas Mulligan, Grand Forks.

For President-Elect—W. F. Sihler, Devils Lake.

For First Vice-President—John Crawford, New Rockford.

For Second Vice-President—Andrew Carr, Sr., Minot.

For Secretary—J. G. Lamont, San Haven.

For Treasurer—W. W. Wood, Jamestown.

For Delegate to A. M. A.—E. A. Pray, Valley City.

For Alternate—E. L. Goss, Carrington.

For Councilors—E. M. Ransom, Minot; J. Ross MacKenzie, Carrington; P. G. Arzt, Jamestown; Charles MacLachlan, New Rockford.

For Board of Medical Examiners—J. W. Bowen, Dickinson; F. L. Wicks, Valley City; C. E. Stackhouse, Bismarck.

Dr. Charles MacLachlan moved the adoption of the report, and that the President cast a unanimous ballot for the nominees.

Motion seconded and unanimously carried.

The President reported the ballot cast and declared the nominees duly elected to their respective offices.

### MEETING PLACE FOR 1928

DR. W. F. SIHLER: I am instructed to invite the Association to meet at Devils Lake next year. I have invitations from our County Society, the Commercial Club, and the Rotary Club. I could give a long argument in favor of Devils Lake, but I think it is not necessary.

Dr. C. E. Stackhouse moved that the invitation be accepted.

Motion seconded and unanimously carried.

Dr. Charles MacLachlan announced that New Rockford would be a candidate for the



meeting place for 1929.

Dr. Ira S. Abplanalp asked whether it would be possible to consider Williston as a meeting place for some future meeting.

#### REPORT OF AUDITING COMMITTEE

Dr. P. G. Arzt reported that the Treasurer's books had been carefully investigated and the accounts checked and found to be correct.

Dr. Charles MacLachlan moved the adoption of the report.

Motion seconded and unanimously carried.

#### REPORT OF COMMITTEE ON MEDICAL DEFENSE

Dr. E. A. Pray, Chairman, stated that he thought it would be well to have arrangements made whereby the question of malpractice suits could be discussed at the 1928 meeting. He believed that the suits were increasing and that it was impossible to get a fair trial from a farmers' jury. He hoped that something could be done through the Aetna Insurance Company to bring down their rates for protection. The rates are high, and the result has been that a great many of the Western men have withdrawn from the group insurance in the Aetna Company, which the Association holds, and have taken up insurance in cheaper companies. He was satisfied that there is no better company than the Aetna and that it would be advisable to get those men back into group insurance if possible, although he did not feel entirely satisfied with the situation even with group insurance. There were many suits on hand, and he believed if some of them went to the Supreme Court they would be set aside, but not all would go to the Supreme Court, and many of them would have to be settled.

Dr. Lamont moved the adoption of this report.

Motion seconded and carried.

Dr. Charles MacLachlan presented the following vote of thanks:

DR. MACLACHLAN: I am sure it will meet with the approval of the North Dakota State Medical Association as represented by the House of Delegates, that before closing the proceedings of this meeting we give recognition to the many courtesies and kindnesses extended its members during the present session. I, therefore, move, Mr. President, that the thanks of the Association be and are hereby tendered to the Grand Forks Medical Society for their very efficient and courteous care of our wants while in attendance at this meeting.

Motion seconded and unanimously carried by rising vote.

Dr. G. M. Williamson, on behalf of the Grand Forks Medical Society, expressed the appreciation of its members for this action, and extended an invitation to the Association to meet in Grand Forks whenever possible.

Dr. Thomas Mulligan briefly expressed his appreciation of the honor shown him in his election as president.

Dr. E. A. Pray moved that the Chairman appoint a Committee on Publication consisting of three members to assist the Secretary in checking up the material to be published.

Motion seconded and unanimously carried.

Dr. N. O. Ramstad stated that he would leave the appointment of this committee to the incoming president.

Dr. G. M. Williamson brought up the matter of expense of the meetings, and asked what the Council would consider the legitimate expense of the meeting to be paid for out of the sum set aside by the Council for this purpose. He thought it would be well to have a committee of three appointed, two Delegates and one Councilor, to discuss this matter and decide what would be the legitimate expense to be met by the Association.

Dr. J. G. Lamont expressed the opinion that it would be well for the Council at this meeting to outline the things that the Secretary should issue vouchers for, and that it would be a good thing to schedule the expenses so that they could be acted upon.

Dr. E. A. Pray stated that formerly the local society furnished the annual banquet, and a fund of \$150.00 was voted to help take care of this. Since the members now pay for their own banquet tickets he thought the purpose of the fund was lost.

Dr. G. M. Williamson explained that this change was made several years ago to prevent the annual meeting being a burden on the profession in small places.

Dr. W. W. Wood said that when the meeting was held in Jamestown there was no charge for the annual banquet for the local men took care of it. He did not know that any fund was given by the Association to assist local societies in defraying the expenses. He took the matter up with Dr. Rowe, who said that the original idea was that if there was no charge for the banquet there should be a donation of \$150.00 to the local society, but if the members paid for their own banquet tickets there should be no donation.

Dr. Kent E. Darrow expressed the opinion that it would be impossible to cover the expenses of an annual meeting even at \$150.00.

Dr. G. M. Williamson said that a committee from the Council would investigate the matter of expense and report at the 1928 meeting.

Dr. W. F. Sihler brought up the matter of reports from the State University concerning pathological specimens and stated his belief that there was much more work than could be done properly by the present staff. Dr. Banks had suggested that if the men throughout the state were dissatisfied with their reports it would be well to take the matter up with the President of the University and ask if more men could not be obtained for that department. He stated that if they could have one more technician they could give twenty-four hour service, and the results would be much better.

Dr. Kent E. Darrow endorsed everything Dr. Sihler said and thought if the Association could do anything to see that the University had more funds it would be well worth while.

Dr. Lamont moved that a committee be appointed, consisting of Dr. W. F. Sihler, Dr. Kent E. Darrow, and Dr. James Grassick, to investigate this matter and draft a suitable resolution to be presented to the proper authorities.

Motion seconded and unanimously carried.

As this completed the business before the House of Delegates, on motion regularly seconded and carried, the meeting was declared adjourned at 1:25 P. M., *sine die*.

## PROCEEDINGS OF THE GENERAL AND SCIENTIFIC SESSION

WEDNESDAY, JUNE 1, 1927

The first general meeting was called to order in the First M. E. Church, Grand Forks, N. D., at 9:15 A. M., Wednesday, June 1, 1927, by the President, Dr. N. Oliver Ramstad, Bismarck.

In the absence of the Vice-Presidents, Dr. Ramstad requested the Secretary, Dr. J. G. Lamont, to take the chair while he delivered the Presidential Address.

President Ramstad then welcomed the guests of the Association and extended to them the privileges of the floor.

Dr. R. E. Pray, Valley City, read a paper entitled "Intercostal Neuralgia." Discussed by Drs. Paul H. Burton, Fargo; Thomas Mulligan, Grand Forks; James Grassick, Grand Forks; and, in closing, by Dr. Pray.

Dr. J. O. Arnson, Bismarck, Dr. L. W. Larson, Bismarck, and Dr. Dean Lewis, Professor of Surgery at Johns Hopkins University, Baltimore, Md., presented papers on the medical, pathological and surgical aspects, respectively, of "Goiter."

Dr. Ernest M. Hammes, Associate Professor of Nervous and Mental Diseases, University of Minnesota, Minneapolis, Minn., read a paper entitled "Neuropsychiatric Disorders and Hyperthyroidism."

These four papers were discussed by Drs. H. H. Healy, Grand Forks; A. L. Cameron, Minot; William A. Jones, Minneapolis, Minn.; and, in closing, by Drs. Arnson, Larson, Lewis, and Hammes.

Dr. R. D. Campbell announced the plans of the Committee on Entertainment and called attention to the meeting of the House of Delegates immediately following adjournment of the general meeting.

The President announced that the Lions Club and the Kiwanis Club would both meet at 12:15, and that Dr. Dean Lewis would address the latter.

The meeting was declared adjourned at 12:10 to reconvene at 1:30 P. M.

## FIRST DAY—AFTERNOON SESSION

The afternoon meeting of the first day was called to order at 1:50 P. M., by the President, Dr. N. Oliver Ramstad, Bismarck.

The President introduced Dr. John H. Rindlaub, Fargo, who was unable to fulfill his duties as President during the 1926 session because of illness, and Dr. Rindlaub briefly addressed the Association.

The President then requested Dr. James Grassick to inform the Association of the action of the House of Delegates concerning Dr. F. R. Smyth, of Bismarck, and Dr. V. H. Stickney, of Dickinson.

Dr. Grassick gave a brief explanation of the action of the House of Delegates and read the resolution that was adopted by it, and published on page 430.

Dr. Charles MacLachlan moved that the Association in open session approve the action of the House of Delegates in regard to the resolution.

Motion seconded.

Dr. Kent E. Darrow amended this motion to include the action of the House of Delegates making these two gentlemen honorary members of the Association.



Amendment seconded and carried.

Dr. MacLachlan and his seconder accepted the amendment, and the motion as amended was put to a vote and unanimously carried.

Dr. Arthur Steindler, Professor of Orthopedic Surgery, State University of Iowa, was unable to be present at the meeting, but submitted his paper, entitled "Arthropathies of Charcot Joints," which was read by title.

Dr. Frank E. Burch, Professor of Ophthalmology, University of Minnesota, presented a paper on "Ocular Complications of Diabetes." Discussed by Drs. Rolfe Tainter, Fargo; G. M. Constans, Bismarck; John H. Rindlaub, Fargo; and, in closing, by Dr. Burch.

Dr. Frank L. Jennings, Oak Terrace, Minn., read a paper entitled "The Treatment of Pulmonary Tuberculosis: Can it be Made More Interesting for the Man in General Medicine?" Discussed by Drs. J. G. Lamont, San Haven; James K. Anderson, Crookston, Minn.; John E. Hetherington, Grand Forks; and, in closing, by Dr. Jennings.

Dr. H. E. French, Grand Forks, gave an informal "Demonstration of Epiphyseal Lines."

As this concluded the program for the afternoon the meeting was declared adjourned at 4:45 P. M. to reconvene at 9:00 A. M., Thursday.

#### ANNUAL BANQUET

The annual banquet was held at the Hotel Dakotah on Wednesday evening, June 1, 1927, at 7:30.

Music was furnished by local talent during the dinner. Following the dinner Dr. George M. Williamson introduced Mr. Thomas Kane, President of the North Dakota State University, who delivered a brief address and welcomed the Association on behalf of the University.

President Ramstad then took charge of the program and introduced Dr. Dean Lewis, of Johns Hopkins, Baltimore, Md., who delivered a brief address.

The President then introduced Dr. William Boyd, Professor of Pathology in the University of Manitoba, who delivered a very impressive address on "Lord Lister."

Dr. William A. Jones, Minneapolis, Minn., was then introduced, and congratulated the Association on its very enlightening and instructive program and recounted some of the experiences of the early practitioners.

#### THURSDAY, JUNE 2—MORNING SESSION

The Association was called to order at 9:15 on Thursday, June 2, 1927, by the President, Dr. N. Oliver Ramstad, Bismarck.

Dr. F. C. Rodda, Associate Professor of Pediatrics, University of Minnesota, Minneapolis, addressed the Association on "The Prevention of Acute Contagious Diseases in Children." Discussed by Drs. Edward C. Haagenen, Grand Forks; J. O. Arnson, Bismarck; W. C. Nolte, Jamestown; Kent E. Darrow, Fargo; Edward H. Ehlert, Minneapolis; A. H. Nerad, Argyle, Minn.; Charles E. Bennett, Aneta, N. D.; and, in closing, by Dr. Rodda.

Dr. W. C. McVicar, Rochester, Minn., addressed the Association on "The Diagnosis of Gastric and Duodenal Diseases."

Dr. William Carpenter MacCarty, Rochester, Minn., addressed the Association on "Clinical and Pathological Significance of Gastric and Duodenal Lesions," with lantern slides.

These two papers were discussed by Drs. Thomas Mulligan, Grand Forks; John Crawford, New Rockford; Martin D. Westley, Cooperstown; L. W. Larson, Bismarck; and, in closing, by Dr. McVicar and Dr. MacCarty.

The Association adjourned at 12:10 to reconvene at 1:30 P. M.

#### THURSDAY, JUNE 2—AFTERNOON SESSION

The Association was called to order at 1:45 by the President, Dr. N. Oliver Ramstad, Bismarck.

Dr. Wallace H. Cole, Head of the Department of Orthopedic Surgery in Miller Hospital, St. Paul, the Shriners Hospital for Crippled Children, Minneapolis, Minn., addressed the Association on "Fractures," and gave a demonstration of the most approved methods of treating fractures. Discussed by Drs. W. F. Sihler, Devils Lake; Cyril J. Glaspel, Grafton; H. H. Healy, Grand Forks; and, in closing, by Dr. Cole.

The Secretary gave a brief report of the proceedings of the House of Delegates, announcing the newly elected officers and the next meeting place.

Dr. Ramstad then introduced the incoming President, Dr. Thomas Mulligan, Grand Forks, who said:

I only wish to say that I appreciate the honor that has been conferred upon me in being elected President of the North Dakota State Medical Association for the coming year. I do not think I deserve it for what I have done. I think I can qualify from the neck down, but I am glad the House of Delegates did not require a psychological examination, for I fear I could not qualify in that.

It seems to be the consensus of opinion that this is the best meeting we have had, and we have two men to thank for that. They are Dr. Ramstad and the chairman he selected for the Program Committee: Dr. Campbell told me he suggested to the

gentlemen he invited to appear upon the program the nature of the subject he wished them to present, and I think that has had much to do with the success of the program.

I wish to say to the membership as a whole that we would of course like to have a successful year, and that depends largely upon the assistance and support I receive from each of you. I hope the men in the individual districts will strive to get in all eligible non-members. I think this is largely a personal proposition and by using personal influence new members often can be secured. I wish also to say that we are very fortunate in having a very efficient Secretary, and we are going to try to have every officer visit a certain number of the local societies and attend their meetings. I think that will be of great benefit to all of us. (Applause.)

Dr. William Boyd, Professor of Pathology, University of Manitoba, addressed the Association on "The Pathology of the Anemias."

Dr. E. W. Montgomery, Professor of Internal Medicine, University of Manitoba, addressed the

Association on "Treatment of the Anemias."

These two papers were discussed by Drs. William C. MacCarty, Rochester, Minn.; Horace McM. Banks, Grand Forks; John E. Hetherington, Grand Forks; W. C. McVicar, Rochester, Minn.; and, in closing, by Dr. Boyd and Dr. Montgomery.

Dr. Paul D. Mossman, Surgeon U.S.P.H.S., Rolla, Mo., addressed the Association on "Trachoma," with lantern slides and demonstration of patients. Discussed by Drs. John Rindlaub, Fargo; Gustavus J. McIntosh, Devils Lake; G. F. Drew, Devils Lake; and, in closing, by Dr. Mossman.

Dr. E. H. Ehlert, Minneapolis, gave a moving picture demonstration of the processes used in the manufacture of biologicals.

As this completed the program, the meeting was declared adjourned at 5:40 P. M. *sine die*.

## PRESIDENT'S ADDRESS: A REVIEW OF THE MEDICAL EVENTS OF THE PAST YEAR\*

By N. O. RAMSTAD, M.D.

BISMARCK, NORTH DAKOTA

In conformity with the custom of this Association, I will give a brief review of the medical events of the past year which may be of interest to its members.

No great plagues have threatened the civilized world, and our state has been singularly free from the ravages of serious epidemics. Medicine and surgery have made continual progress in all branches without any one great outstanding discovery. The medical profession is carrying on its scientific warfare against disease more effectively than ever before. The plagues are being attacked at their fountain-heads, and a concentrated attack on cancer is being made by the entire scientific world.

Reports from our component Societies indicate increased attendance at the meetings with better programs. A number of Societies have abandoned the monthly meeting plan and have only four or five meetings annually. Special efforts were made to make the meetings interesting and instructive, and good attendance was the result. Speakers from outside societies, the presentation of clinical cases by the members, and informal dinners to promote good fellowship, have been important factors.

We need to choose our medical reading with

great care and to devote some time regularly to the study of the medical literature and the abstracts prepared by the editors of medical and surgical journals. Medical literature has become so voluminous that our state and local societies should serve to emphasize that which is of scientific and practical value in the prevention and treatment of disease.

The last state legislature gave careful consideration to legislation affecting the health of the public. Increased appropriations were given to the State Tuberculosis Sanitarium so that its capacity will be doubled next year, and about 220 patients can then be cared for. If tuberculosis is to be controlled we must not be content with present accomplishments. A tuberculosis worker states that "We are providing only room for the terminal cases in North Dakota, and making no organized effort for the control of early or far-advanced cases." We should establish sanatoria in various parts of the state; and possibly two or more counties could unite in sharing the expense of such institutions as has been done in other states. The State Tuberculosis Association has been doing splendid work, and especially by sending their traveling clinic into the sparsely settled parts of the state. It should have the whole-hearted support of every member of our Association.

\*Presented before the Fortieth Annual Session of the North Dakota Medical Association, at Grand Forks, N. D., June 1, 1927.



Some vicious legislation affecting hospitals and medical practice was introduced at the last legislative session. Among other matters an effort was made to take from the hospitals the power to appoint their own staff and to force the admission of chiropractors as members of the hospital's staff. Through the efforts of our Legislative Committee nearly every hospital in the state, many of our medical societies, and individual members opposed this measure, and it was decisively defeated in both Senate and House.

Your Legislative Committee had a difficult task, and it deserves the thanks of the State Association for duty well performed. I wish to quote from a report of its chairman, Dr. V. J. LaRose: "We wish to emphasize that we found every legislator willing and anxious to discuss bills pertaining to medical legislation. Never at any time were we refused polite audience and respectful attention when we requested the privilege of an interview. There would be little difficulty in obtaining medical and health legislation if public opinion could be aroused in matters pertaining to the health of the public. The members of our State Association should seize every opportunity to explain that medical and health legislation is for the benefit of the public and that it is not graft for the doctors."

The Legislative Committee again advised that all proposed legislation should be brought before the State Association for approval at its annual meeting, when it may be referred to its Legislative Committee.

The Medical Defense Committee, of which Dr. E. A. Pray is chairman, has rendered efficient service. It seems as if the public is more and more inclined to blame the doctors and to seek solace in suits for damages. Malpractice suits have been increasing all over the country, and it behooves us to use greater care, keep better records, have more frequent consultations, use more x-ray examinations, and to know and keep well within our own limitations. At the present time there are pending within the state twenty-eight suits against doctors. Of these, twelve have to deal with fractures. This high percentage of fracture cases in the courts indicates that the public is far from satisfied with the results of the treatment in this class of cases. Special study should be given to fractures by every physician accepting the responsibility of their treatment. It would be well if each local society would devote one meeting annually to the malpractice situation and invite as speakers prominent judges and members of the state bar.

The present laws do not protect the public

against the numerous cults that attempt to treat disease without education or training in the underlying sciences relating to the human body. This condition has become so serious that a number of states have passed the so-called Basic Science Law which requires practitioners of every form of healing to pass an examination in anatomy, physiology, chemistry, bacteriology, pathology, diagnosis, and hygiene. Wisconsin, Minnesota, and Nebraska have adopted this plan, and North Dakota should have a similar law. It is the duty of the medical profession within the next two years to educate the public so that North Dakota will adopt the Basic Science Law. Every local medical society should consider this matter and determine how it can best aid this movement.

There are many welfare organizations within the state attempting to deal with social and health problems. The increasing wealth of our Nation has caused many people to contribute to these worthy organizations that often establish free clinics, free hospitals, and employed professional social workers to organize and direct their activities. We medical men know that much of this work is misdirected and devoid of permanent results. We should take more active interest in this work and not let these efforts fail because of the lack of co-operation of trained physicians and surgeons. If we do not do so, this work will pass into other hands, and it may be an incentive to the establishment of State medicine. The physician is the person who is best qualified to aid and direct welfare activities of this kind. The medical profession is often accused of hiding its light under a bushel.

Should not our local and state societies find a better way of co-operating with the press and the public in the dissemination of medical knowledge?

Newspaper editors assure me that the public is eager for reliable health and medical information, if it is presented in a proper manner.

The increasing importance of radio broadcasting could be utilized for the same purpose. Well prepared talks given under the supervision of committees of the state or local medical societies would be of great help in combating cults and fads and in spreading true medical knowledge.

I wish to thank the officers of this Association, and the members of the state committees, for the efficient service they have rendered during the past year.

There has been a fine spirit of co-operation and good fellowship within the Association which has made the year's activities a pleasant memory.

## DISTRICT AND COUNTY ROSTER

## CASS COUNTY MEDICAL SOCIETY

PRESIDENT  
Huntley, H. B. \_\_\_\_\_ Leonard

SECRETARY  
Lewis, T. H. \_\_\_\_\_ Fargo

Aylen, J. P. \_\_\_\_\_ Fargo  
Baillie, W. F. \_\_\_\_\_ Fargo  
Bakke, Hans \_\_\_\_\_ Lisbon  
Bohnsack, E. M. \_\_\_\_\_ Fargo  
\*Bottolfson, B. T. Moorhead, M.  
\*Brophy, J. W. \_\_\_\_\_ Fargo  
Brown, W. G. \_\_\_\_\_ Fargo  
Burton, Paul H. \_\_\_\_\_ Fargo  
Callander, C. N. \_\_\_\_\_ Fargo  
Carpenter, Geo. A. \_\_\_\_\_ Fargo  
Clay, A. J. \_\_\_\_\_ Fargo  
Dahlquist, G. W. \_\_\_\_\_ Fargo  
Darrow, F. I. \_\_\_\_\_ Fargo  
Darrow, Kent E. \_\_\_\_\_ Fargo  
Dillon, J. G. \_\_\_\_\_ Fargo  
Evans, L. J. \_\_\_\_\_ Fargo  
\*Gooslee, G. Moorhead, Minn.  
Gronvold, F. O. \_\_\_\_\_ Fargo  
Hanna, J. F. \_\_\_\_\_ Fargo  
\*Associate Memebers

Harkins, J. L. \_\_\_\_\_ Fargo  
Haugen, Hans \_\_\_\_\_ Fargo  
Haynes, Geo. H. \_\_\_\_\_ Lisbon  
Heimark, A. J. \_\_\_\_\_ Fargo  
Heimark, J. J. \_\_\_\_\_ Fargo  
Hendrickson, Gilbert \_\_\_\_\_ Enderlin  
Hotchkiss, W. M. \_\_\_\_\_ Fargo  
Huntley, H. B. \_\_\_\_\_ Leonard  
James, J. B. \_\_\_\_\_ Page  
Joistad, A. H. \_\_\_\_\_ Fargo  
Kaess, A. J. \_\_\_\_\_ Fargo  
Kilbourne, B. K. \_\_\_\_\_ Fargo  
Lancaster, W. E. G. \_\_\_\_\_ Fargo  
Larson, G. A. \_\_\_\_\_ Fargo  
Lewis, T. H. \_\_\_\_\_ Fargo  
Limburg, A. M. \_\_\_\_\_ Fargo  
Lipp, G. R. \_\_\_\_\_ Bismarck  
Lodge, F. B. \_\_\_\_\_ Steele  
Long, W. H. \_\_\_\_\_ Fargo  
MacGregor, M. \_\_\_\_\_ Fargo  
Miller, H. W. \_\_\_\_\_ Casselton  
Morris, A. C. \_\_\_\_\_ Fargo  
Myers, L. W. \_\_\_\_\_ Fargo  
Nichols, A. A. \_\_\_\_\_ Fargo  
Nichols, Wm. C. \_\_\_\_\_ Fargo

Oftedal, Arne \_\_\_\_\_ Fargo  
Oftedal, Axel \_\_\_\_\_ Fargo  
Oftedal, Sverre \_\_\_\_\_ Fargo  
Ostrander, A. J. \_\_\_\_\_ Enderlin  
Owens, P. L. \_\_\_\_\_ Buffalo  
Patterson, T. C. \_\_\_\_\_ Lisbon  
Platou, L. S. \_\_\_\_\_ Fargo  
Richter, E. H. \_\_\_\_\_ Hunter  
Rindlaub, Elizabeth P. \_\_\_\_\_ Fargo  
Rindlaub, J. H. \_\_\_\_\_ Fargo  
Rindlaub, M. P. \_\_\_\_\_ Fargo  
Rostel, R. Hugo \_\_\_\_\_ Fargo  
Rothnem, T. P. \_\_\_\_\_ Fargo  
Rowe, H. J. \_\_\_\_\_ Minneapolis  
Sand, Olaf \_\_\_\_\_ Fargo  
Skelsey, A. W. \_\_\_\_\_ Fargo  
Tainter, R. \_\_\_\_\_ Fargo  
\*Thornby, H. J., Moorhead, M.  
Tronnes, N. \_\_\_\_\_ Fargo  
\*Trysell, F. A., Moorhead, Min.  
Wands, E. E. \_\_\_\_\_ Lisbon  
Watson, E. M. \_\_\_\_\_ Fargo  
Weible, R. E. \_\_\_\_\_ Fargo  
Weyrens, P. J. \_\_\_\_\_ Sheldon

## DEVILS LAKE DISTRICT MEDICAL SOCIETY

PRESIDENT  
Emert, H. F. \_\_\_\_\_ Sarles

SECRETARY  
Drew, G. F. \_\_\_\_\_ Devils Lake

Arneson, A. O. \_\_\_\_\_ McVile  
Call, A. M. \_\_\_\_\_ Rugby  
Campbell, R. W. \_\_\_\_\_ Bisbee  
Carter, J. A. \_\_\_\_\_ Warwick  
Drew, G. F. \_\_\_\_\_ Devils Lake  
Emert, H. F. \_\_\_\_\_ Sarles  
Engesather, J. A. D. \_\_\_\_\_ Brockett  
Fawcett, W. C. \_\_\_\_\_ Starkweather

Floew, A. T. \_\_\_\_\_ Harvey  
Graham, J. D. \_\_\_\_\_ Starkweather  
Hayhurst, J. O. \_\_\_\_\_ Rolette  
Horsman, A. T. \_\_\_\_\_ Devils Lake  
Hoskins, J. H. \_\_\_\_\_ Bismarck  
Jones, W. D. \_\_\_\_\_ Devils Lake  
Lamont, J. G. \_\_\_\_\_ San Haven  
Lees, H. D. \_\_\_\_\_ Minneapolis  
Lund, A. B. \_\_\_\_\_ Leeds  
McDonald, J. A. \_\_\_\_\_ Cando  
McGurran, C. J. \_\_\_\_\_ Devils Lake  
McIntosh, G. J. \_\_\_\_\_ Devils Lake  
McLean, Neil \_\_\_\_\_ Devils Lake

Nicholson, E. G. \_\_\_\_\_ Lawton  
O'Brien, W. P. \_\_\_\_\_ Egeland  
Phillips, J. M. \_\_\_\_\_ Bisbee  
Roberts, F. J. \_\_\_\_\_ Cando  
Sihler, W. F. \_\_\_\_\_ Devils Lake  
Smith, Clinton \_\_\_\_\_ Devils Lake  
Sedlacek, B. B. \_\_\_\_\_ Oberon  
Stickelberger, J. \_\_\_\_\_ Oberon  
Swenson, A. W. \_\_\_\_\_ Bisbee  
Verret, B. D. \_\_\_\_\_ Rolla  
Vigeland, J. G. \_\_\_\_\_ Brinsmade  
Widmeyer, J. P. \_\_\_\_\_ Rolla

## GRAND FORKS DISTRICT MEDICAL SOCIETY

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Hetherington, J. E., Grand Fks.

SECRETARY  
Benwell, H. D. \_\_\_\_\_ Grand Forks

Allaire, J. \_\_\_\_\_ Plaza  
Arneberg, J. G. \_\_\_\_\_ Grand Forks  
Beek, R. H. \_\_\_\_\_ Lakota  
Beeson, H. B. \_\_\_\_\_ Grand Forks  
Bennett, C. E. \_\_\_\_\_ Aneta  
Bentzen, O. \_\_\_\_\_ Grand Forks  
Benwell, H. D. \_\_\_\_\_ Grand Forks  
Campbell, Robt. D. \_\_\_\_\_ Grand Forks  
Countryman, J. E. \_\_\_\_\_ Grafton  
Deason, F. W. \_\_\_\_\_ Grafton  
Eggers, Aug. \_\_\_\_\_ Grand Forks  
Engstad, J. E. \_\_\_\_\_ Grand Forks  
Field, A. B. \_\_\_\_\_ Forest River  
French, H. E. \_\_\_\_\_ Grand Forks  
Gislason, G. J. \_\_\_\_\_ Grand Forks  
Glaspel, C. J. \_\_\_\_\_ Grafton  
Glaspel, G. W. \_\_\_\_\_ Grafton  
Grassick, Jas. \_\_\_\_\_ Grand Forks

Haagenson, E. C. \_\_\_\_\_ Grand Forks  
Halldorson, M. B. \_\_\_\_\_ Winnipeg  
Hamilton, J. S. \_\_\_\_\_ Bathgate  
Harris, C. B. \_\_\_\_\_ Pembina  
Healy, H. H. \_\_\_\_\_ Grand Forks  
Hetherington, J. E. \_\_\_\_\_ Grand Forks  
Irvine, V. S. \_\_\_\_\_ Park River  
Jelstrup, Christian \_\_\_\_\_ Kindred  
Kirkham, J. H. \_\_\_\_\_ Langdon  
Landry, L. H. \_\_\_\_\_ Walhalla  
Law, H. W. F. \_\_\_\_\_ Grand Forks  
Leigh, R. E. \_\_\_\_\_ Grand Forks  
Liebeler, W. A. \_\_\_\_\_ Grand Forks  
Lommen, C. E. \_\_\_\_\_ Fordville  
Mahon, Ruth M. \_\_\_\_\_ Grand Forks  
McLean, R. N. \_\_\_\_\_ Gilby  
McQueen, W. W. \_\_\_\_\_ Langdon  
Miller, J. P. \_\_\_\_\_ Grand Forks  
Moore, J. H. \_\_\_\_\_ Grand Forks  
Mulder, J. L. \_\_\_\_\_ Cavalier  
Mulligan, T. \_\_\_\_\_ Grand Forks  
O'Keefe, Henry \_\_\_\_\_ Grand Forks  
Panek, A. F. \_\_\_\_\_ Milton

Peake, F. Margaret \_\_\_\_\_ Grand F'ks  
Porter, W. H. \_\_\_\_\_ Calvin  
Ruud, M. B. \_\_\_\_\_ Grand Forks  
Rystad, O. H. \_\_\_\_\_ Grand Forks  
Smith, J. C. \_\_\_\_\_ Thompson  
Spannare, C. I. \_\_\_\_\_ Mayville  
Stacey, J. W. \_\_\_\_\_ Crystal  
Stromberg, G. E. \_\_\_\_\_ Langdon  
Suter, J. C. \_\_\_\_\_ Grafton  
Taylor, J. D. \_\_\_\_\_ Grand Forks  
Thompson, A. Y. \_\_\_\_\_ Larimore  
Thorgimsen, G. G., Grand Fks.  
Thorlakson, H. F. \_\_\_\_\_ Crystal  
Wagar, W. D. \_\_\_\_\_ Michigan  
Waldren, H. M. \_\_\_\_\_ Drayton  
Waldron, H. M., Jr. \_\_\_\_\_ Drayton  
Weed, F. E. \_\_\_\_\_ Park River  
Welch, W. H. \_\_\_\_\_ Larimore  
Wheeler, H. M. \_\_\_\_\_ Grand Forks  
Williamson, G. M. \_\_\_\_\_ Grand Forks  
Witherstine, W. H. \_\_\_\_\_ Grand Forks  
Woutat, H. G. \_\_\_\_\_ Grand Forks  
Wylie, A. R. T. \_\_\_\_\_ Grafton



## SIXTH DISTRICT MEDICAL SOCIETY

PRESIDENT  
Griebenow, F. F. \_\_\_\_\_ Bismarck  
SECRETARY  
Henderson, R. W. \_\_\_\_\_ Bismarck  
Ahlfs, J. J. \_\_\_\_\_ Bismarck  
Anderson, H. C. \_\_\_\_\_ Bismarck  
Arnsen, J. O. \_\_\_\_\_ Bismarck  
Aylen, W. C. \_\_\_\_\_ Mandan  
Benson, O. T. \_\_\_\_\_ Glen Ullin  
Bodenstab, W. H. \_\_\_\_\_ Bismarck  
Brandes, H. A. \_\_\_\_\_ Bismarck  
Brandt, A. M. \_\_\_\_\_ Bismarck  
Bunting, F. E. \_\_\_\_\_ Mandan  
Diven, W. L. \_\_\_\_\_ Bismarck  
Eastman, L. G. \_\_\_\_\_ Hazen  
Fisher, A. M. \_\_\_\_\_ Inglewood, Cal.  
Fisher, Stephen, \_\_\_\_\_ New Salem  
Freise, P. W. \_\_\_\_\_ Bismarck

Frisch, F. P. \_\_\_\_\_ Bismarck  
Gaebel, O. C. \_\_\_\_\_ New Salem  
Gordon, W. L. \_\_\_\_\_ Washburn  
Graber, R. E. \_\_\_\_\_ Bismarck  
Griebenow, F. F. \_\_\_\_\_ Bismarck  
Hamilton, E. E. \_\_\_\_\_ New Leipzig  
Heinzroth, G. E. \_\_\_\_\_ Turtle Lake  
LaRose, V. J. \_\_\_\_\_ Bismarck  
Larson, E. J. \_\_\_\_\_ Underwood  
Larson, L. W. \_\_\_\_\_ Bismarck  
Laughlin, Zach. \_\_\_\_\_ Fort Yates  
Leavitt, R. H. \_\_\_\_\_ Carson  
Lodge, F. B. \_\_\_\_\_ Steele  
Monteith, George \_\_\_\_\_ Hazelton  
Nickerson, B. S. \_\_\_\_\_ Mandan  
Pierce, W. B. \_\_\_\_\_ Bismarck  
Quain, Fannie D. \_\_\_\_\_ Bismarck  
Quain, E. P. \_\_\_\_\_ Bismarck

Ramstad, N. O. \_\_\_\_\_ Bismarck  
Rice, P. F. \_\_\_\_\_ Solen  
Roan, M. W. \_\_\_\_\_ Bismarck  
Robinson, C. O., Atlantic, Iowa  
Schipfer, L. A. \_\_\_\_\_ Chicago  
Schoregge, C. W. \_\_\_\_\_ Bismarck  
Smith, C. C. \_\_\_\_\_ Mandan  
Smith, L. G. \_\_\_\_\_ Mandan  
Smyth, F. R. \_\_\_\_\_ Bismarck  
Spielman, G. H. \_\_\_\_\_ Mandan  
Stackhouse, C. E. \_\_\_\_\_ Bismarck  
Strauss, F. B. \_\_\_\_\_ Bismarck  
Timm, J. F. \_\_\_\_\_ Makoti  
Thelen, W. P. \_\_\_\_\_ Wilton  
Thompson, R. C. \_\_\_\_\_ Wilton  
Waldschmidt, R. H. \_\_\_\_\_ Bismarck  
Whittemore, A. A. \_\_\_\_\_ Bismarck  
Wolverton, W. C. \_\_\_\_\_ Linton

## SOUTHWESTERN DISTRICT MEDICAL SOCIETY

PRESIDENT  
Lemieux, D. \_\_\_\_\_ Bowman  
SECRETARY  
Dach, J. L. \_\_\_\_\_ Reeder

Cornelius, F. J. \_\_\_\_\_ Bowman  
Dach, J. L. \_\_\_\_\_ Reeder  
Hill, S. W. \_\_\_\_\_ Regent  
Lemieux, D. \_\_\_\_\_ Bowman  
Mordoff, G. E. \_\_\_\_\_ Hettinger

Schneider, J. E. \_\_\_\_\_ Bowman  
Schumacher, N. W. \_\_\_\_\_ Hettinger  
Voss, Carl \_\_\_\_\_ Hettinger  
Wendell, W. G. \_\_\_\_\_ Marmarth  
Whittemore, A. A. \_\_\_\_\_ Bismarck

## STARK COUNTY MEDICAL SOCIETY

PRESIDENT  
Davis, H. A. \_\_\_\_\_ Dickinson  
SECRETARY  
Nachtwey, A. P. \_\_\_\_\_ Dickinson  
Bowen, J. W. \_\_\_\_\_ Dickinson

Chernauek, Sam \_\_\_\_\_ Dickinson  
Crossette, G. D. \_\_\_\_\_ Richardson  
Davis, H. A. \_\_\_\_\_ Dickinson  
Gumper, J. B. \_\_\_\_\_ Belfield  
Law, I. M. \_\_\_\_\_ Halliday  
Nachtwey, A. P. \_\_\_\_\_ Dickinson

Perkins, George A. \_\_\_\_\_ Dickinson  
Radl, R. B. \_\_\_\_\_ Hebron  
Smith, O. \_\_\_\_\_ Killdeer  
Spear, A. E. \_\_\_\_\_ Belfield  
Stickney, V. H. \_\_\_\_\_ Dickinson

## STUTSMAN COUNTY MEDICAL SOCIETY

PRESIDENT  
Woodward, F. O. \_\_\_\_\_ Jamestown  
SECRETARY  
Berg, H. M. \_\_\_\_\_ Jamestown  
Arzt, P. G. \_\_\_\_\_ Jamestown  
Bailey, A. T. \_\_\_\_\_ Jamestown  
Berg, H. M. \_\_\_\_\_ Jamestown  
Buzzell, C. P. \_\_\_\_\_ Cleveland  
Carpenter, G. S. \_\_\_\_\_ Pingree

Culbert, M. H. \_\_\_\_\_ Courtenay  
De Puy, T. L. \_\_\_\_\_ Jamestown  
Gerrish, W. A. \_\_\_\_\_ Jamestown  
Guest, A. W. \_\_\_\_\_ Jamestown  
Holt, G. H. \_\_\_\_\_ Jamestown  
Johnson, D. W. \_\_\_\_\_ Jamestown  
Lang, A. A. \_\_\_\_\_ Jamestown  
Lang, F. F. \_\_\_\_\_ Montpelier  
Longstreth, W. E. \_\_\_\_\_ Kensal

Melzer, S. W. \_\_\_\_\_ Woodworth  
Nolte, W. C. \_\_\_\_\_ Jamestown  
Peake, F. \_\_\_\_\_ Jamestown  
Sorkness, Jos. \_\_\_\_\_ Jamestown  
Todd, G. \_\_\_\_\_ Medina  
Winn, W. R. \_\_\_\_\_ Jamestown  
Wink, Helen K. \_\_\_\_\_ Jamestown  
Wood, W. W. \_\_\_\_\_ Jamestown  
Woodward, F. O. \_\_\_\_\_ Jamestown

## TRI-COUNTY MEDICAL SOCIETY

PRESIDENT  
Owenson, H. A. \_\_\_\_\_ Grace City  
SECRETARY  
Van de Erve, H. \_\_\_\_\_ Carrington  
Boyum, P. A. \_\_\_\_\_ Harvey  
Brown, Fred \_\_\_\_\_ McClusky  
Clark, I. D. \_\_\_\_\_ Fargo  
Crawford, John \_\_\_\_\_ New Rockford

Critchfield, R. J. \_\_\_\_\_ Fessenden  
Donker, A. E. \_\_\_\_\_ Carrington  
Gaebel, E. C. \_\_\_\_\_ Zap  
Goss, E. L. \_\_\_\_\_ Carrington  
MacKenzie, J. Roy \_\_\_\_\_ New Rockf'd  
MacLachlan, Chas \_\_\_\_\_ New R'kford  
McKeague, D. H. \_\_\_\_\_ Maddock  
Matthaei, D. W. \_\_\_\_\_ Fessenden

Mattson, R. H. \_\_\_\_\_ New Rockford  
Meadows, R. W. \_\_\_\_\_ Sheyene  
Owenson, H. A. \_\_\_\_\_ Grace City  
Rasmussen, R. C. \_\_\_\_\_ Harvey  
Seibel, J. J. \_\_\_\_\_ Harvey  
Tompkins, C. R. \_\_\_\_\_ Oberon  
Van de Erve, H. \_\_\_\_\_ Carrington  
Westervelt, A. E. \_\_\_\_\_ Bowdon

## KOTANA MEDICAL SOCIETY

PRESIDENT  
Scott, W. B. \_\_\_\_\_ Ray  
SECRETARY  
Jones, C. S. \_\_\_\_\_ Williston  
Abplanalp, I. S. \_\_\_\_\_ Williston

Craven, J. P. \_\_\_\_\_ Williston  
Dochterman, L. B. \_\_\_\_\_ Williston  
Hagen, E. J. \_\_\_\_\_ Mahtomedi, Minn.  
Houston, C. J. \_\_\_\_\_ Watford City  
Jones, C. S. \_\_\_\_\_ Williston  
Johnson, P. O. C. \_\_\_\_\_ Watford City

Morris, V. G. \_\_\_\_\_ Tioga  
Rogers, Jos. \_\_\_\_\_ Alexander  
Scott, W. B. \_\_\_\_\_ Ray  
Skovholt, H. T. \_\_\_\_\_ Williston  
Wicklund, C. A. \_\_\_\_\_ Wildrose  
Wright, W. A. \_\_\_\_\_ Westby, Mont.

## NORTHWESTERN DISTRICT MEDICAL SOCIETY

PRESIDENT  
Wheelon, F. W. \_\_\_\_\_ Minot  
SECRETARY  
Sinamark, A. \_\_\_\_\_ Minot

Blatherwick, W. E. \_\_\_\_\_ Van Hook  
Budd, G. J. \_\_\_\_\_ Ambrose  
Cameron, A. L. \_\_\_\_\_ Minot  
Carr, Andrew \_\_\_\_\_ Minot  
Carr, Andy M. \_\_\_\_\_ Minot  
Christie, F. J. \_\_\_\_\_ Deering  
Craie, O. S. \_\_\_\_\_ Towner  
Dalager, N. O. \_\_\_\_\_ Willow City  
Devine, J. L. \_\_\_\_\_ Minot  
Durnin, G. A. \_\_\_\_\_ Bottineau  
Durnin, Charles \_\_\_\_\_ Westhope  
Erenfeld, H. M. \_\_\_\_\_ Minot  
Ewing, John \_\_\_\_\_ Kenmare  
Fardy, M. J. \_\_\_\_\_ Minot  
Flath, A. \_\_\_\_\_ Stanley

Flath, Milford G. \_\_\_\_\_ Stanley  
Frogner, G. S. \_\_\_\_\_ Plaza  
Grangaard, H. O. \_\_\_\_\_ Ryder  
Greaves, J. P. \_\_\_\_\_ Sherwood  
Greene, E. E. \_\_\_\_\_ Westhope  
Halliday, D. J. \_\_\_\_\_ Kenmare  
Halverson, H. L. \_\_\_\_\_ Des Lacs  
Hammargren, A. F. \_\_\_\_\_ Harvey  
Hanson, G. C. \_\_\_\_\_ Minot  
Haraldson, O. O. \_\_\_\_\_ Minot  
Hillis, S. J. \_\_\_\_\_ Berthold  
Hood, C. E. \_\_\_\_\_ Lansford  
Jensen, A. F. \_\_\_\_\_ Willow City  
Johns, S. M. \_\_\_\_\_ Velva  
Johnson, J. A. \_\_\_\_\_ Bottineau  
Kermott, L. H. \_\_\_\_\_ Minot  
Knapp, H. G. \_\_\_\_\_ Minot  
Kolb, F. K. \_\_\_\_\_ Granville  
Landes, H. E. \_\_\_\_\_ Kenmare  
Leedahl, O. S. \_\_\_\_\_ Stanley

McGuire, F. A. \_\_\_\_\_ Velva  
MacKay, A. R. \_\_\_\_\_ Bottineau  
McCannel, Archie D. \_\_\_\_\_ Minot  
Moffatt, George \_\_\_\_\_ Crosby  
Nestos, P. A. \_\_\_\_\_ Minot  
Newlove, J. T. \_\_\_\_\_ Minot  
Parker, R. M. \_\_\_\_\_ Portal  
Pence, J. R. \_\_\_\_\_ Minot  
Pence, R. W. \_\_\_\_\_ Minot  
Ransom, E. M. \_\_\_\_\_ Minot  
Ray, R. H. \_\_\_\_\_ Garrison  
Rollefson, C. J. \_\_\_\_\_ Ambrose  
Sinamark, A. \_\_\_\_\_ Minot  
Smith, J. A. \_\_\_\_\_ Noonan  
Sorenson, A. R. \_\_\_\_\_ Minot  
Steeves, Elmer O. \_\_\_\_\_ Rugby  
Stone, E. C. \_\_\_\_\_ Minot  
Welker, A. J. \_\_\_\_\_ Max  
Wheelon, F. E. \_\_\_\_\_ Minot  
Yeomans, T. N. \_\_\_\_\_ Minot

## RICHLAND COUNTY MEDICAL SOCIETY

PRESIDENT  
Greenman, N. H. \_\_\_\_\_ Fairmont  
SECRETARY  
Olson, C. T. \_\_\_\_\_ Wyndmere  
Allen, R. W. \_\_\_\_\_ Forman  
Greenman, N. H. \_\_\_\_\_ Fairmont

Ivers, M. U. \_\_\_\_\_ Christine  
Jacobs, G. C. \_\_\_\_\_ Wahpeton  
Lancaster, W. M. \_\_\_\_\_ Wahpeton  
O'Brien, T. \_\_\_\_\_ Wahpeton  
Olson, C. T. \_\_\_\_\_ Wyndmere  
Rice, C. P. \_\_\_\_\_ Wahpeton

Ryan, D. E. \_\_\_\_\_ Hankinson  
Sasse, E. G. \_\_\_\_\_ Lidgerwood  
Thane, Benj. \_\_\_\_\_ Wahpeton  
Thompson, A. M., Abercrombie  
Wiig, I.C.J. Fort Lauderdale, Fla.  
Wray, W. E. \_\_\_\_\_ Campbell, Minn.

## SHEYENNE VALLEY MEDICAL SOCIETY

PRESIDENT  
Crosby, E. M. \_\_\_\_\_ Valley City  
SECRETARY  
Moore, W. H. \_\_\_\_\_ Valley City  
Almklow, L. \_\_\_\_\_ Cooperstown  
Crosby, E. B. \_\_\_\_\_ Valley City  
Kellogg, P. M. \_\_\_\_\_ Rogers

LeBien, E. A. \_\_\_\_\_ McHenry  
MacDonald, A. C. \_\_\_\_\_ Valley City  
MacDonald, A. W. \_\_\_\_\_ Valley City  
Moore, W. H. \_\_\_\_\_ Valley City  
Nesse, S. A. \_\_\_\_\_ Nome  
Platou, C. A. \_\_\_\_\_ Litchville  
Pray, E. A. \_\_\_\_\_ Valley City  
Pray, R. E. \_\_\_\_\_ Valley City

Spicer, C. E. \_\_\_\_\_ Valley City  
Truscott, J. R. \_\_\_\_\_ Binford  
VanHouten, J. \_\_\_\_\_ Valley City  
Wanner, W. B. \_\_\_\_\_ Wimbledon  
Westley, M. D. \_\_\_\_\_ Cooperstown  
Wicks, F. L. \_\_\_\_\_ Valley City  
Zimmerman, S. A. \_\_\_\_\_ Valley City

## SOUTHERN DISTRICT MEDICAL SOCIETY

PRESIDENT  
Greene, L. B. \_\_\_\_\_ Edgeley  
SECRETARY  
Ferguson, F. W. \_\_\_\_\_ Kulm  
Campbell, C. C. \_\_\_\_\_ Ashley  
Ferguson, F. W. \_\_\_\_\_ Kulm

Grace, J. B. \_\_\_\_\_ Zealand  
Grant, Geo. \_\_\_\_\_ Wishek  
Greene, L. B. \_\_\_\_\_ Edgeley  
Gunderman, H. R. \_\_\_\_\_ Monago  
Hubbard, F. G. \_\_\_\_\_ Cogswell  
Lyle, W. D. \_\_\_\_\_ Havana  
Lynde, Roy \_\_\_\_\_ Ellendale

Maercklein, E. H. \_\_\_\_\_ Ashley  
Meredith, C. J. \_\_\_\_\_ Marion  
Meunier, H. J. \_\_\_\_\_ Oakes  
Meadows, E. M. \_\_\_\_\_ Oakes  
Ribble, Geo. B. \_\_\_\_\_ LaMoure  
Scanlon, J. E. \_\_\_\_\_ Edgeley



## TRAIL-STEELE MEDICAL SOCIETY

## PRESIDENT

Cuthbert, W. H. — Hillsboro

## SECRETARY

Vinje, Syver — Hillsboro

Cuthbert, W. H. — Hillsboro

Gibbons, J. M. — Finley

Glasscock, T. J. — Finley

Hjelle, C. A. — Portland

Kjelland, A. A. — Hatton

Knutson, O. A. — Buxton

Little, R. C. — Mayville

Litman, M. H. — Hope

Odegaard, B. — Northwood

Savre, M. T. — Northwood

Swanson, J. C. — Clifford

Vinje, Syver — Hillsboro

## ALPHABETICAL ROSTER

Abplanalp, Ira S. — Williston  
 Ahlfs, J. J. — Bismarck  
 Allaire, J. — Plaza  
 Allen, R. W. — Forman  
 Almklov, L. — Cooperstown  
 Anderson, H. C. — Bismarck  
 Arneberg, J. G. — Grand Forks  
 Arnson, J. O. — Bismarck  
 Arneson, A. O. — McVile  
 Arzt, P. G. — Jamestown  
 Aylen, J. P. — Fargo  
 Aylen, W. C. — Mandan  
 Bailey, A. T. — Jamestown  
 Baillie, W. F. — Fargo  
 Bakke, Hans — Lisbon  
 Beek, R. H. — Lakota  
 Beeson, H. B. — Grand Forks  
 Bennett, C. E. — Aneta  
 Benwell, H. D. — Grand Forks  
 Benson, O. T. — Glen Ullin  
 Bentzen, O. — Grand Forks  
 Berg, H. M. — Jamestown  
 Blatherwick, W. — Van Hook  
 Bodenstab, W. H. — Bismarck  
 Bohnsack, E. M. — Fargo  
 Bottolfson, B. T., Moorhead, M.  
 Bowen, J. W. — Dickinson  
 Boyum, P. A. — Harvey  
 Brandes, H. A. — Bismarck  
 Brandt, A. M. — Bismarck  
 Brophy, J. W. — Fargo  
 Brown, Fred — McClusky  
 Brown, W. G. — Fargo  
 Budd, G. J. — Ambrose  
 Bunting, F. E. — Mandan  
 Burton, P. H. — Fargo  
 Buzzell, C. P. — Cleveland  
 Call, A. M. — Rugby  
 Callander, C. N. — Fargo  
 Cameron, A. L. — Minot  
 Campbell, C. C. — Ashley  
 Campbell, Robt. D. — Grand Forks  
 Campbell, R. W. — Bisbee  
 Carpenter, Geo. A. — Fargo  
 Carpenter, G. S. — Pingree  
 Carr, Andrew — Minot  
 Carr, Andy. M. — Minot  
 Carter, J. A. — Warwick  
 Chernauek, Sam — Dickinson  
 Christie, F. J. — Deering  
 Clark, I. D. — Fargo  
 Clay, A. J. — Fargo  
 Cornelius, F. J. — Bowman  
 Countryman, J. E. — Grafton  
 Craie, O. S. — Towner  
 Craven, J. P. — Williston  
 Crawford, John New Rockford  
 Critchfield, R. J. — Fessenden  
 Crosby, E. B. — Valley City  
 Crossette, G. D. — Richardton  
 Culbert, M. H. — Courtenay  
 Cuthbert, W. H. — Hillsboro  
 Dach, J. L. — Reeder

Dahlquist, G. W. — Fargo  
 Dalager, N. O. — Willow City  
 Darrow, F. I. — Fargo  
 Darrow, Kent E. — Fargo  
 Davis, H. A. — Dickinson  
 Deason, F. W. — Grafton  
 De Puy, T. L. — Jamestown  
 Devine, J. L. — Minot  
 Dillon, J. G. — Fargo  
 Diven, W. L. — Bismarck  
 Dochterman, L. B. — Williston  
 Donker, A. E. — Carrington  
 Drew, G. F. — Devils Lake  
 Durnin, Charles — Westhope  
 Durnin, G. A. — Bottineau  
 Eastman, L. G. — Hazen  
 Eggers, Aug. — Grand Forks  
 Emert, H. F. — Sarles  
 Engesather, J. A. D. — Brouckett  
 Engstad, J. E. — Grand Forks  
 Erenfeld, H. M. — Minot  
 Evans, L. J. — Fargo  
 Ewing, John — Kenmare  
 Fardy, M. J. — Minot  
 Fawcett, W. C. — Starkweather  
 Ferguson, F. W. — Kulm  
 Field, A. B. — Forest River  
 Fisher, A. M. — Bismarck  
 Fisher, Stephen — New Salem  
 Fjelde, J. H. — Fargo  
 Flath, A. — Stanley  
 Flath, Milford G. — Stanley  
 Floew, A. T. — Harvey  
 French, H. E. — Grand Forks  
 Freise, P. W. — Bismarck  
 Frisch, F. P. — Bismarck  
 Frogner, G. S. — Plaza  
 Gaebe, E. C. — Zap  
 Gaebe, O. C. — New Salem  
 Gerrish, W. A. — Jamestown  
 Gibbons, J. M. — Findley  
 Gislason, G. J. — Grand Forks  
 Glaspel, C. J. — Grafton  
 Glaspel, G. W. — Grafton  
 Glasscock, T. J. — Finley  
 Gordon, W. L. — Washburn  
 Goslee, G. — Moorhead, Minn.  
 Goss, E. L. — Carrington  
 Graber, R. E. — Bismarck  
 Grace, J. B. — Zealand  
 Graham, J. D. — Starkweather  
 Grangaard, H. O. — Ryder  
 Grant, Geo. — Wishek  
 Grassick, Jas. — Grand Forks  
 Greaves, J. P. — Sherwood  
 Greene, E. E. — Westhope  
 Greene, L. B. — Edgeley  
 Greenman, N. H. — Fairmont  
 Griebenow, F. F. — Bismarck  
 Gronvold, F. O. — Fargo  
 Guest, A. W. — Jamestown  
 Gumper, J. B. — Belfield  
 Gunderman, H. R. — Monango

Haagenon, E. C. — Grand Forks  
 Hagen, E. J. — Mahtomedi, Minn.  
 Halldorson, M. B. — Win'peg, Ca.  
 Halliday, D. J. — Grenora  
 Halverson, H. L. — Des Lacs  
 Hammargren, A. F. — Harvey  
 Hamilton, E. E. — New Leipzig  
 Hamilton, J. S. — Bathgate  
 Hanna, J. F. — Fargo  
 Hanson, G. C. — Minot  
 Harkins, J. L. — Fargo  
 Harris, C. B. — Pembina  
 Haraldson, O. O. — Minot  
 Haugen, Hans — Fargo  
 Hayhurst, J. O. — Rolette  
 Haynes, Geo. H. — Lisbon  
 Healy, H. H. — Grand Forks  
 Heimark, A. J. — Fargo  
 Heimark, J. J. — Fargo  
 Heinzroth, G. E. — Turtle Lake  
 Henderson, R. W. — Bismarck  
 Hendrickson, Gilbert — Enderlin  
 Hetherington, J. E. — Grand Forks  
 Hill, S. W. — Regent  
 Hillis, S. J. — Berthold  
 Hjelle, C. A. — Portland  
 Holt, G. H. — Jamestown  
 Hood, C. E. — Lansford  
 Horsman, A. T. — Devils Lake  
 Hoskins, J. H. — Bismarck  
 Hotchkiss, W. M. — Fargo  
 Hubbard, F. G. — Cogswell  
 Huntley, H. B. — Leonard  
 Houston, C. J. — Watford City  
 Irvine, V. S. — Park River  
 Ivers, M. U. — Christine  
 Jacobs, G. C. — Wahpeton  
 James, J. B. — Page  
 Jelstrup, Christian — Kindred  
 Jensen, A. F. — Willow City  
 Johns, S. M. — Velva  
 Johnson, D. W. — Jamestown  
 Johnson, J. A. — Bottineau  
 Johnson, P. O. C. — Watford City  
 Joistad, A. H. — Fargo  
 Jones, C. S. — Williston  
 Jones, W. D. — Devils Lake  
 Kaess, A. J. — Fargo  
 Kellogg, P. M. — Rogers  
 Kermott, L. H. — Minot  
 Kirkham, J. H. — Langdon  
 Knutson, O. A. — Buxton  
 Lancaster, W. E. G. — Fargo  
 Lang, F. F. — Montpelier  
 Larson, G. A. — Fargo  
 Lees, H. D. — Minneapolis  
 Leigh, R. E. — Grand Forks  
 Lipp, G. R. — Bismarck  
 Lodge, F. B. — Steele  
 Mc Guire, F. A. — Velva  
 Kilbourne, B. K. — Fargo  
 Kjelland, A. A. — Hatton  
 Knapp, H. G. — Minot

Kolb, F. K. — Granville  
 LaRose, V. J. — Bismarck  
 Lamont, J. G. — San Haven  
 Lancaster, W. — Abercrombie  
 Landes, H. E. — Kenmare  
 Landry, L. H. — Walhalla  
 Lang, A. A. J. — Jamestown  
 Larson, E. J. — Underwood  
 Larson, L. W. — Bismarck  
 Laughlin, Zach. — Neopit, Wis.  
 Law, H. W. F. — Grand Forks  
 Law, I. M. — Halliday  
 LeBien, E. A. — McHenry  
 Leavitt, R. H. — Carson  
 Leedahl, O. S. — Stanley  
 Lemieux, D. — Bowman  
 Lewis, T. H. — Fargo  
 Liebeler, W. A. — Grand Forks  
 Limburg, A. M. — Fargo  
 Litman, M. H. — Hope  
 Little, R. C. — Mayville  
 Lommen, C. E. — Fordville  
 Long, W. H. — Fargo  
 Longstreth, W. E. — Kensal  
 Lund, A. B. — Leeds  
 Lyle, W. D. — Havana  
 Lynde, Roy — Ellendale  
 MacDonald, A. C. — Valley City  
 MacDonald, A. W. — Valley City  
 MacGregor, Murdock — Fargo  
 MacKay, A. R. — Bottineau  
 MacKenzie, J. Roy — New Rockf'd  
 MacLachlan, C. — New Rockford  
 McCannel, Archie D. — Minot  
 McDonald, J. A. — Cando  
 McGurren, C. J. — Devils Lake  
 McIntosh, G. J. — Devils Lake  
 McKeague, D. H. — Maddock  
 McLean Neil. — Devils Lake  
 McLean, R. M. — Gilby  
 McQueen, W. W. — Langdon  
 Maercklein, E. H. — Ashley  
 Mahon, Ruth M. — Grand Forks  
 Matthaei, D. W. — Fessenden  
 Mattson, R. H. — New Rockford  
 Meadows, E. M. — Oakes  
 Meadows, R. W. — Sheyenne  
 Melzer, S. W. — Woodworth  
 Meredith, C. J. — Marion  
 Meunier, H. J. — Oaks  
 Miller, H. W. — Casselton  
 Miller, J. P. — Grand Forks  
 Moffatt, George — Crosby  
 Monteith, George — Hazelton  
 Moore, J. H. — Grand Forks  
 Moore, W. H. — Valley City  
 Mordoff, G. E. — Hettinger  
 Morris, A. C. — Fargo  
 Mulder, J. L. — Cavalier  
 Mulligan T. — Grand Forks  
 Myers, L. W. — Fargo  
 Nachtwey, A. P. — Dickinson  
 Nesse, S. A. — Nome  
 Nestos, P. A. — Minot  
 Newlove, J. T. — Minot  
 Nichols, A. A. — Fargo  
 Nichols, Wm. C. — Fargo  
 Nicholson, E. G. — Lawton  
 Nickerson, B. S. — Mandan  
 Nolte, W. C. — Jamestown  
 O'Brien, T. — Wahpeton  
 O'Brien, W. P. — Egeland  
 O'Keefe, Henry — Grand Forks  
 Odegard, B. — Northwood

Oftedal, Arne — Fargo  
 Oftedal, Axel — Fargo  
 Oftedal, Sverre — Fargo  
 Olson, C. T. — Wyndmere  
 Ostrander, A. J. — Enderlin  
 Owens, P. L. — Buffalo  
 Owenson, H. A., Alhambra, Cal.  
 Panek, A. F. — Milton  
 Parker, R. M. — Portal  
 Patterson, T. C. — Lisbon  
 Peake, F. — Jamestown  
 Peake, F. Margaret — Grand Forks  
 Pence, J. R. — Minot  
 Pence, R. W. — Minot  
 Perkins, Geo. A. — Dickinson  
 Pierce, W. B. — Bismarck  
 Phillips, J. M. — Bisbee  
 Platon, C. A. — Litchville  
 Platou, L. S. — Fargo  
 Porter, W. H. — Calvin  
 Pray, E. A. — Valley City  
 Pray, R. E. — Valley City  
 Quain, E. P. — Bismarck  
 Quain, Fannie D. — Bismarck  
 Radl, R. B. — Hebron  
 Ramstad, N. O. — Bismarck  
 Ransom, E. M. — Minot  
 Rasmussen, R. C. — Harvey  
 Ray, R. H. — Garrison  
 Ribble, George B. — La Moure  
 Rice, C. P. — Wahpeton  
 Rice, P. F. — Solen  
 Richter, E. H. — Hunter  
 Rindlaub, Elizabeth P. — Fargo  
 Rindlaub, John H. — Fargo  
 Rindlaub, M. P. — Fargo  
 Roan, M. W. — Bismarck  
 Roberts, F. J. — Cando  
 Robinson, C. O., Atlantic, Iowa  
 Rogers, Joseph — Alexander  
 Rollefson, C. J. — Ambrose  
 Rostel, R. Hugo — Fargo  
 Rothnem, T. P. — Fargo  
 \*Rowe, H. J. — Minneapolis  
 Ruud, M. B. — Grand Forks  
 Ryan, D. E. — Hankinson  
 Rystad, O. H. — Grand Forks  
 Sand, Olaf — Fargo  
 Sasse, E. G. — Lidgerwood  
 Savre, M. T. — Northwood  
 Scanlon, J. E. — Edgeley  
 Schipfer, L. A. — Chicago  
 Schneider, J. E. — Bowman  
 Schoregge, C. W. — Bismarck  
 Schumacher, N. W. — Hettinger  
 Scott, W. B. — Rav  
 Sedlacek, B. B. — Oberon  
 Seibel, J. J. — Harvey  
 Sihler, W. F. — Devils Lake  
 Sinamark, A. — Minot  
 Skelsey, A. W. — Fargo  
 Skovholt, H. T. — Williston  
 Smith, C. C. — Mandan  
 Smith, Clinton — Devil's Lake  
 Smith, J. A. — Noonan  
 Smith, J. C. — Thompson  
 Smith, L. G. — Mandan  
 Smith, Oscar — Killdeer  
 Smyth, F. R. — Bismarck  
 Sorenson, A. R. — Rugby  
 Sorkness, Jos. — Jamestown  
 Spannare, C. I. — Mayville  
 Spear, A. E. — Belfield  
 Spicer, C. E. — Valley City

Spielman, Geo. H. — Mandan  
 Stacey, J. W. — Crystal  
 Stackhouse, C. E. — Bismarck  
 Steeves, Elmer O. — Rugby  
 Stickelberger, Josephine — Oberon  
 Stickney, V. H. — Dickinson  
 Stone, E. C. — Minot  
 Strauss, F. B. — Bismarck  
 Stromberg, G. E. — Langdon  
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 Thompson, R. C. — Wilton  
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 Wolverton, W. C. — Linton  
 Wood, W. W. — Jamestown  
 Woodward, F. O. — Jamestown  
 Woutat, H. G. — Grand Forks  
 Wylie, A. R. T. — Grafton  
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 Yeomans, T. N. — Minot  
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# THE JOURNAL-LANCET

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The Official Journal of the  
North Dakota and South Dakota State Medical Associations  
The Hennepin County Medical Society  
The Soo Railway Surgical Association  
and The Sioux Valley Medical Association

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SEPTEMBER 15, 1927

## THE GANGSTER AND THE EXPERT

There seems to be a bit of an uneasy feeling among the criminals, not necessarily over what punishment they may draw through a trial in the courts but from the probability of their being hauled up before a board of psychiatrists to be put through a test to determine the sanity or insanity of the gangster. We recently noted in the papers that the gangsters really feel more humiliated to think they should be subjected to the test of the psychiatrist than when they appear before the courts. They feel it a greater humiliation than being scrutinized by judge and jury. For some reason they have always felt that a good criminal lawyer can cause more trouble in the courts, and secure more delays by suggesting and demanding, perhaps, that the criminal be examined as to his sanity. The gangster and his lawyer know that paid alienists are numerous, and they gladly come to the rescue and save the murderer from the gallows or a long term in prison, provided he has the price.

Unfortunately for the gangster it happens that some hard-hearted authorities in Chicago have chosen to take the sob-sister and the sentimentalist at their word in the theories that a criminal is nothing more or less than a man with a diseased mind. Not infrequently they

succeed in getting the examination fixed. But for some reason or other, lately they have found the plea is not quite as easy to carry out as they expect, and a good many of these sob-sister-sentimentalist people are finding now that the gangster is really put in a state hospital for the insane and kept there; and if he should recover his reason, which is quite likely, he is then to be tried by the courts, and it makes it very difficult for the sympathizer and also for the criminal lawyer. As long as they are confined in a state institution for the criminal insane, society is fairly safe from these so-called defectives of the criminal type. It is well that they are somewhere behind closed doors rather than at large on bail or through long resistance of the final trial as the methods of escape.

Of course, we assume that the psychiatrists who examine these people are going to do it in a duly approved manner; that is, they are genuine psychiatrists, they know the difference between sanity and insanity, and they have no sentiment about their procedures. This matter has put the "yellow fellow" in a different light. One of the papers quotes that "these men fight lustily for findings of insanity when they are not under indictment for murder or highway violence, and show friendliness for that recourse only when they are directly in a tight place in a court trial and see no other way out."

Recently in Minneapolis a man followed a woman in the outskirts of the city and struck her on the head, from which blow she died. After he was arrested the question of his mental state came up, and it was found true that he had been a criminal, an insane man, and had been in one or two penal as well as hospital institutions. But for this final deed he was examined by two psychiatrists of repute who promptly found him insane, and he is now sojourning in a hospital for the criminal insane in Minnesota. A few days ago a man shot and killed three or four people who were camping not far from his cabin in the woods, going out there at three o'clock in the morning, riddling the tent and killing these innocent people while they slept. It did not take long to discover that he was mentally incompetent, violently insane, and he was promptly sent to the hospital for the criminal insane in Minnesota.

It is evidently going to be a difficult thing for the gangster to know just what to do. If he is convicted of murder he knows one of two things is going to happen to him. He is either going to be confined in prison for life or confined in a state hospital for an indefinite period; and, if

he dares to get out, he knows that he may have to face a real trial for murder. The probabilities are that he will get as far away as possible from his former scenes of crime, but fate overtakes these people wherever they go. It is very rarely that they are able to delay the final punishment for very long. This also looks as if we might some day have a commission appointed by the court to examine into the mental status of these people, and it is to be hoped, too, that some day the lawyers will not waste so much time in protecting a criminal from the acts of society rather than protect society from the acts of the criminal. It is quite a difficult matter to make a lawyer understand that he must admit on occasion that a man is a murderer. His business, of course, is to get him out, if possible, but he can not keep that sort of thing up very long. We have just had a recent experience in this country in which justice was delayed for seven years—an outrage on the people. But the probabilities are that the public is waking up to the necessity of protecting itself, and it is earnestly expected that society will protect itself further from immigration of men or women who are defective or have a well-developed criminal attitude. Our immigration laws will doubtless be overhauled at the coming session of Congress, and if it is possible these criminals will be kept on their own shores.

#### A WARNING—THE NEW BASIC SCIENCE LAW IN MINNESOTA AND ITS REQUIREMENTS

This law was passed by the last Minnesota Legislature, and it provides that every physician practicing in Minnesota shall register his license to practice with the County Clerk of Courts, certified by him, and returned to the Secretary of the Basic Science Board, Dr. E. T. Bell, University of Minnesota.

This registration is required of every physician practicing in Minnesota. No one is exempt from this registration.

The physician who practices in Minnesota after October 1 without such registration is subject to a fine of \$25.00, or he may be compelled to take the Basic Science Examination.

In spite of the numerous warnings already given to Minnesota physicians some of them have not yet complied with the registration requirements, and they may suffer great inconvenience by the enforcement of the penalty.

### MISCELLANY

#### DR. J. A. RANKIN—AN APPRECIATION

Dr. J. A. Rankin who died in Los Angeles, Calif., on August 9, 1927, was the sixteenth president of the North Dakota Medical Association and for nine years its treasurer.

Dr. Rankin was born at Monmouth, Illinois, in 1857. He graduated with the class of 1883 from Jefferson Medical College and for two years practiced in St. Paul. He removed to Jamestown, North Dakota, in 1885, and was appointed Northern Pacific surgeon one year later, in charge of the North Dakota division. In 1909 he disposed of his interests and practice in Jamestown and removed to California, where he engaged in fruit ranching for six years in an effort towards health recuperation.

On returning to North Dakota, in 1916, he became a member of the Volunteer Medical Service Corps and of the local Medical Advisory Board in the Tri-County District, and also became associated with others in practice at Carrington.

Dr. Rankin was a pioneer physician whose long and continued close association with the medical fraternity of North Dakota has maintained for him throughout the years an unusual place of prominence and affection.

J. G. L.

### NEWS ITEMS

Dr. L. P. Dame, of Bahrein, Arabia, visited the Mayo Clinic last month.

Dr. O. S. Werner, formerly of St. Hilaire and Thief River Falls, has moved to St. Paul.

Dr. O. J. Esser, a recent graduate of Marquette University, has begun practice at New Ulm.

Dr. J. M. Hayes, of Minneapolis, has gone to Europe to spend three months in the various clinics.

Dr. Emil S. Geist, of Minneapolis, has returned from a three months' visit to the clinics of Europe.

Dr. Philemon Roy, of St. Paul, has returned from Europe, where he has been for several months visiting hospitals and clinics.

Dr. W. F. Raiter, of Cloquet, has returned from a European study trip. He visited the clinics of Berlin, Vienna, and Oslo.

Dr. Arnt G. Anderson, of Minneapolis, has returned from a three months' trip to Europe, most of his time being spent in Vienna.



Dr. A. F. Branton, of Willmar, has gone to France to attend The American Legion meeting. He will visit a number of the leading clinics.

Dr. Owen H. Wangenstein, of Minneapolis, is going to Europe for a year's study in the clinics. He will spend some months in Berne, Switzerland.

The next meeting of the Association of Resident and Ex-Resident Physicians of the Mayo Clinic will be held in Rochester, on September 26, 27, and 28.

The three-story addition to the West wing of the Winona General Hospital was opened last month, and many visitors inspected this attractive new hospital.

Dr. C. W. Paulson, of North Branch, has sold his practice to Dr. C. E. Nelson, of Minneapolis, and is now taking a course of work in the Post Graduate Hospital, of Chicago.

Dr. Andrew Sinamark, of Minot, N. D., has gone to Europe. After attending the Legion Convention in Paris he will spend three months in eye, ear, nose, and throat work in Vienna.

Dr. Paul E. Kenyon and Drs. Thomas and Thayer C. Davis, of Wadena, have formed a partnership. Dr. Kenyon is now on his way to Europe to do postgraduate work in children's diseases.

Dr. Donald R. Claydon, a recent graduate of the Medical School of the University of Louisville, has joined the Medical Block Clinic of Red Wing, of which his father, Dr. L. E. Claydon, is a leading member.

The cornerstone of the new 300-bed hospital at St. Cloud was laid last week. This new building being erected by the Sisters of the Order of St. Benedict will cost over a million dollars and will be completed this year.

Dr. Thomas G. Newell, of Adrian, died last month at the age of 69. Dr. Newell was a graduate of the University Medical College of Kansas City, class of '96, and had practiced in Minnesota since his graduation.

Dr. George D. Eitel, of Minneapolis, and Miss Katherine E. Scott, of Duluth, were married last week. Dr. Eitel is associated with his uncle, Dr. Geo. G. Eitel, in the Eitel Hospital. Dr. Eitel will spend a year in surgical work in Europe.

Dr. F. E. Schlutz, of the Department of Pediatrics of the University of Minnesota, has returned from an extended tour of South Ameri-

can cities, where he went upon invitation. He made several addresses on medical subjects in the cities visited.

Dr. Albert A. Rounsevell, a pioneer and a notable physician of North Dakota, the fourth president of the State Medical Association, died in Miami, Florida, last month at the age of 82. Dr. Rounsevell began practice in Larimore in 1882 and continued there until he went to Florida, in 1910.

Dr. Peder A. Hoff, of St. Paul, died last week at the age of 52. Dr. Hoff was born in Minnesota and graduated from the Medical School of the U. of M., in the class of '00. He remained in the Medical School for some time as an instructor and then began practice in St. Paul, where he continued till his death.

The publication of "Parent Education," the volume covering the Proceedings of The Northwest Conference on Child Health and Parent Education, held in Minneapolis last March, is announced by The University of Minnesota Press. Early orders are requested. Cost, post-paid, \$2.00. Address: The Editor, University of Minnesota Press, Minneapolis.

#### Northwestern District Medical Society of North Dakota

The August meeting was held at the Kenmare Hospital, August 31, following a dinner at seven o'clock. There were twenty members and guests present.

The Society went on record as being willing to co-operate with the International Society for Crippled Children, following a talk on the proposed work of the Society by Dr. A. D. McCannel, vice-president of the North Dakota Unit.

The following Clinical program was presented:

Dr. Halladay—(1) Large cyst of the broad ligament. (2) Acute pancreatitis caused by impacted stone in ampulla of Vater.

Dr. Nestos—Case of osteomyelitis.

Dr. Landes—Fracture of neck of femur treated by Whitman method.

ANDREW SINAMARK, M.D.,  
Secretary

#### Annual Meeting of the Southern Minnesota Medical Association Austin, Minnesota

September 30-October 1, 1927

#### PROGRAM

September 30, 1927—Afternoon Session

1:00 P. M.—Session Opens

Presentation of Cases—Two hours.

Dr. W. P. Larson, Professor Bacteriology and Immunology, University of Minnesota, Minneapolis, Minnesota: "Malta Fever."

Dr. T. B. Magath, Mayo Clinic, Rochester, Minnesota: "The Broad Tapeworm (*Diphyllobothrium latum*) in Minnesota" (With lantern slide illustrations).

Dr. R. G. Green, Asst. Professor Bacteriology and Immunology, University of Minnesota, Minneapolis, Minnesota: "Tularemia in Minnesota."

Dr. S. A. Slater, Worthington, Minnesota: "The Physician and the Sanatorium."

Dr. R. N. Andrews, Mankato Clinic, Mankato, Minnesota: "Congenital Pyloric Stenosis."

Dr. W. Ray Shannon, St. Paul, Minnesota: "Intussusception in Children—Eight Unusual Cases."

Dr. S. W. Adler, Winona Clinic, Winona, Minnesota: "Poliomyelitis."

#### **Banquet—7:00 P. M.**

Toastmaster: President H. T. McGuigan, Red Wing, Minnesota.

Speakers: Address of Welcome by the Mayor of Austin.

Dr. W. J. Mayo, Mayo Clinic, Rochester, Minnesota.

Dr. H. Berglund, Department of Medicine, University of Minnesota, Minneapolis, Minnesota: "Pericious Anemia."

#### **Reception**

##### **October 1, 1927—Morning Session—8:30 A. M.**

President's Address: Dr. H. T. McGuigan, Red Wing, Minnesota.

Dr. J. Jay Keegan, Dean University of Nebraska, Omaha, Nebraska: "Trends in Medical Education and Medical Practice."

Dr. H. L. Beye, Professor of Surgery, University of Iowa, Iowa City, Ia: "Un-united Fractures of the Tibia—Etiology and Treatment."

Dr. H. T. Jones, Mayo Clinic, Rochester, Minnesota: "Burn Contractures of the Axilla."

Dr. Paul W. Giessler, Minneapolis, Minnesota: "Some Internal Derangements of the Knee Joint."

Dr. W. L. Benedict, Mayo Clinic, Rochester, Minnesota: "Foreign Therapy in Ocular Diseases."

Dr. William H. Howard, Nicollet Clinic, Minneapolis, Minnesota: "Some Phases in the Diagnosis and Treatment of Maxillary Sinusitis."

Dr. E. L. Schield, Mankato Clinic, Mankato, Minnesota: (Subject not announced.)

Dr. Herman J. Kooiker, Albert Lea, Minnesota: "Diathermy and Physical Agents in General Practice."

Dr. J. F. Smersh, Owatonna, Minnesota: (Subject not announced.)

Dr. H. C. Habein, Mayo Clinic, Rochester, Minnesota: "Perinephritic Abscess."

#### **Luncheon**

Address by Dr. C. B. Wright, President Minnesota State Medical Association, Minneapolis, Minnesota.

#### **Wanted**

Physician's Optical Trial Case. What have you? Address 393, care of this office.

#### **Anesthetist Wanted**

Anesthetist wanted for a Minneapolis office. Address 399, care of this office.

#### **Locum Tenens Work Wanted**

By an experienced physician. Available at once. Address 385, care of this office.

#### **Skeleton Wanted**

An articulated skeleton is wanted in a North Dakota hospital. Address 397, care of this office.

#### **Microscope for Sale**

I have a Bausch & Lomb microscope for sale. Late model F. F. S-8. Address 394, care of this office.

#### **Good Opening for Dentist**

A good opening is offered a German-speaking dentist in a Minnesota town. Address 399, care of this office.

#### **Minnesota Practice for Sale**

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#### **Practice and Office Equipment for Sale**

Well equipped office and practice for sale at Sentinel Butte, North Dakota. Large territory. Good crops. A snap. Terms. Reason for sale, Doctor deceased. Was located here for thirteen years. Address for full information 398, care of this office.

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## DYSPEPSIA\*

BY DAVID M. BERKMAN, M.D.

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AND

MARY A. FOLEY, Dietitian

Division of Medicine, Mayo Clinic

ROCHESTER, MINNESOTA

In the discussion of a subject as inclusive as the title of this paper would indicate one must limit the scope of the discussion to the more common forms of the disease encountered in routine practice. The term "dyspepsia" probably represents one of the largest groups of medical diseases encountered in practice, and in no other group of diseases is an exact diagnosis more important.

For convenience of discussion dyspepsia may be classified as (1) that associated with gastric or duodenal lesions, (2) that of reflex origin, and (3) that of functional origin. In a previous article<sup>2</sup>, attention was directed to the importance of ruling out organic lesions of the stomach and duodenum in any type of abdominal complaint. In many instances this is comparatively simple if competent roentgenologists are available, but even under such circumstances the physician must not be too greatly influenced with regard to his advice concerning treatment. In this discussion of disease of the upper intestinal tract cancer of the stomach will not be considered.

In cases of uncomplicated duodenal ulcer the outstanding symptoms are periodicity, relation to meals, chronicity, relief by food and alkali, and relatively high acids on gastric analysis. Two other rather important considerations in duodenal ulcer are the facts that uncomplicated ulcer is never prostrating and that, if the Sippy diet or a modification of it has been prescribed, a history of temporary relief is the rule.

In a recent series of 100 cases of duodenal ulcer periodicity was present in 90 per cent; pain or distress coming on one and one-half to four hours after meals was present in 91 per cent; and food or alkali relief was present in 97 per cent. The small percentage in which these features were not manifest were usually complicated by perforation, retention, or disease in the gall-bladder or other neighboring organs; or it was not possible to procure a satisfactory history, which happened mainly in case the patients could not speak English. The roentgenologic study of the stomach and duodenum is becoming increasingly valuable in diagnosis. However, the importance of a well-taken history cannot be over emphasized. Entire dependence on roentgenologic evidence may often be not only misleading

\*Presented at the Forty-Sixth Annual Meeting of the South Dakota State Medical Association, at Huron, S. D., May 3-5, 1927.

but may result in misdirected treatment. Not infrequently deformity of the duodenum will be noted in routine gastric examinations without the characteristic ulcer syndrome, and a careful search in the past history will bring to light the fact that symptoms of ulcer had existed many years previously, although the syndrome of which the patient now complains may be entirely independent of the former complaint. Postmortem examinations reveal a rather large percentage of old healed ulcerated areas on the duodenum; obviously, surgical procedures directed toward the repair of such a defect as shown by the Roentgen ray will not bring the desired relief to the patient. To institute active treatment for ulcer one must have besides roentgen-ray evidence a clinical history to support such evidence. In a smaller percentage of cases it is not possible to demonstrate a defect in the duodenum yet the clinical history is quite convincing, and at operation active ulceration is found in the duodenum.

It is inevitable in any large surgical clinic that a certain number of patients will be operated on when the pre-operative diagnosis has been duodenal ulcer, and cholecystitis will be found at operation. The important consideration in this small group of cases is not so much accuracy of diagnosis as the recognition of a serious lesion in the upper part of the abdomen of sufficient severity to justify surgical intervention.

In complicated duodenal ulcer the syndrome may differ considerably. Vomiting may be a prominent feature if there is obstruction. Again, the distress may be more or less constant with little or no relief by food. Vomitus may contain remnants of food taken twelve hours previously. Hemorrhage, while not a frequent complication, may be severe and occasionally will usher in all symptoms. In the last few months we have observed six cases in which severe hemorrhage was the initial symptom of duodenal ulcer to be followed by the characteristic symptoms of the lesion.

Opinion regarding the treatment of duodenal and gastric ulcer differs somewhat. Many clinicians prefer medical treatment if the patient is seen early in the disease, and complications do not exist. This form of treatment consists of the routine Sippy diet or some of its modifications. If, however, complications do exist, operation usually becomes necessary. Some years ago one of us (Berkman<sup>1</sup>) recognized the relatively high surgical mortality in cases of obstructing ulcer and emphasized the necessity of careful pre-operative preparation

of the patient by thorough cleansing of the stomach and the relief of dehydration before operation. McVicar, in studying the chemical changes in the blood in this same group of patients, found elevation of the blood urea, lowering of the plasma chlorides, and lowering of the carbon-dioxide combining powers of the blood. As the result of the re-establishment of the body fluids by the intravenous and rectal administration of glucose and sodium chloride solution and establishment of the chemical equilibrium of the blood, the operative mortality has been reduced materially. Gastric ulcer presents a somewhat different problem. The possibility of malignancy must ever be kept in mind when the ulcer is situated on the gastric side. In duodenal ulcer, however, malignancy rarely can be demonstrated on the base of the old ulceration.

Dyspepsia of reflex origin is a little more difficult of interpretation. Among the contributing causes may be included chronic constipation, chronic cholecystitis, with or without cholelithiasis, chronic appendicitis, the degenerative hepatic diseases, such as cirrhosis, and chronic pancreatitis. Probably the only form of reflex dyspepsia with sufficiently definite and constant features to constitute a syndrome of differential importance is the result of chronic cholecystitis. In the absence of definite colics, it is sometimes difficult to assign the cause of dyspepsia to the gall-bladder. In persons past the age of forty a relatively high incidence of gall-bladder lesions of varying severity may be expected. Probably there are relatively few persons in this group whose symptoms of cholecystitis are severe enough to bring them to the attention of a physician. In other words, the finding at operation of a mildly diseased gall-bladder may not be taken as *prima facie* evidence that the cause of the patient's symptoms lies therein. Unscientific as the statement may sound, in operating on the gall-bladder one is operating for a definite syndrome rather than because of the definitely proved presence of a diseased gall-bladder. One outstanding feature of this type of dyspepsia, as is true of all reflex dyspepsia, is a tendency to constancy rather than to intermittency. Pain other than colic is seldom a feature but a sensation of fullness with frequent eructations of gas and vague distress at the right costal margin is common. Probably the most constant feature is qualitative food distress due to fried, fatty, or other cholesterin-containing foods. Acid eructations are frequent, and temporarily relieved by soda.

Chronic constipation is probably the most



common cause of chronic dyspepsia. In 1926 3,947 patients were referred to the Section on Dietetics of the Mayo Clinic for advice. Of this number 2,485 were referred on account of constipation. In 80 per cent the dyspeptic troubles had been attributed to disease of the upper portion of the gastro-intestinal tract, and as a result the patients limited their diets both quantitatively and qualitatively. In many cases dietary limitations led to other complications.

A normal well-balanced diet is the goal for which we aim in all cases of dyspepsia; this contains an adequate amount of protein, bulk, essential minerals, vitamins, and water.

An anticonstipation diet may be so adjusted as to allow for an increase or decrease in the general body weight as occasion may demand. Fifty grams of protein will supply sufficient nitrogen in most cases. After normal bowel movements are established the protein content may be easily adjusted by adding meat or some substitute. The amount of bulk necessary to produce normal bowel movements varies. Eight hundred grams of fruit and vegetables or, translating this into serving, three large servings of fruits and eight tablespoonsful of vegetables other than potato will furnish a sufficient amount of bulk. In some of the long-standing cases in which the dietary limitations have been drastic it is wiser to give cooked fruits and vegetables for the first two or three weeks and gradually add the raw fruits and vegetables as the patients become accustomed to larger intake. A diet containing three glasses of milk, one egg, and 800 gm. of fruits and vegetables supplies an adequate amount of minerals and vitamins for the average person.

The consumption of water must not be overlooked. There seems to be no happy medium. We have on one hand the man who drinks forty glasses of water before breakfast because he was told that water helped wash away the waste material and, on the other hand, the man who drinks one glass of water a day because water hurts his stomach. Six to eight glasses of water make a very good average. Better results are secured if this water is taken between meals rather than with meals. If too much liquid is taken with the meals there is a tendency to swallow food without proper mastication.

From childhood the fact is drilled into us that we must have a bowel movement every day. Under normal conditions the food taken on any single day should furnish the material for the bowel movement of the third or fourth day. Unless this point is made quite clear the co-opera-

tion of the patient is not secured.

Last month (March, 1927) questionnaires were sent out from the Clinic to seventy-five persons who had come to the Clinic suffering from dyspepsia and who had been given dietary treatment for constipation. Fifty-five of these questionnaires were answered: 31.4 per cent of the patients report excellent results, 49 per cent good results, 16 per cent fair results, and 3.6 per cent poor results.

Dyspepsia of functional origin presents the most difficult diagnostic problem, and one's ability is often taxed in an effort to rule out an organic basis for the complaint. Here, again, the most important diagnostic factor is a carefully taken history. In most instances the gastro-intestinal complaints are only part of the general picture, and a careful study of the patient's physical condition and his nervous stability is necessary to arrive at a final diagnosis. Often there is a family history of nervous disorders, one or several members of the family having had migraine or other evidences of nervous disturbances. The patient himself will frequently exhibit other evidence of nervous fatigue, such as insomnia, indefinite aches and pains elsewhere in the body for which no organic cause can be assigned. Lowered blood pressure with other evidence of vasomotor instability and, in certain cases, a lowered basal metabolic rate is found. Domestic difficulties, financial reverses, overwork, sorrow, and so forth, will frequently usher in the symptoms.

The symptoms of this type of dyspepsia are many and varied and lack constancy in character. As a working basis they can be divided into those simulating ulcer and those simulating disease of the gall-bladder. In functional dyspepsia the characteristic food and soda relief of ulcer may or may not be present. If present, it is likely to be inconstant. Definite periodicity is lacking. The latter point will frequently be the deciding factor in arriving at a final diagnosis. Furthermore, the patient with functional dyspepsia seldom secures relief from the ordinary ulcer management. Prostration may be severe and roentgen-ray evidence of a lesion lacking. To differentiate the condition from gall-bladder disease is most difficult. Pain may not be a complaint in the case of mild disease of the gall-bladder. In cases of functional dyspepsia the patient will frequently complain of pain in practically every part of the abdomen. Food distress is likely to be present in both conditions. In disease of the gall-bladder, however, the distress follows the ingestion of certain types of

food, while in functional dyspepsia the food intolerance is irregular. The patient may find that he can tolerate one type of food one day, and be distressed by the same type of food on the following day. Not infrequently he will gradually eliminate practically all solid foods from his diet and, as a result, will become markedly undernourished. Constipation with laxative habits and resulting mucous colitis will often accompany this type of dyspepsia.

Another type of functional dyspepsia is that associated with migraine or its equivalent. In the treatment of such cases surgery obviously

has little to offer and, if resorted to, will only add one more burden to the already overtaxed nervous system. A careful, painstaking survey of the patient's environment, habits, recreation, and future plans to uncover the source of his nervous derangement, and, furthermore, a detailed discussion of the condition with the patient, will in many instances accomplish wonders.

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## A CASE OF NEPHRITIS WITH UNUSUAL CLINICAL AND ANATOMICAL FINDINGS\*

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A single woman, aged thirty-six years, music teacher, entered the Abbott Hospital on May 3, 1926, with a diagnosis of subacute nephritis with edema. Her complaints were weakness, headache, poor appetite, nausea, pain in the back and lower abdomen, and swelling of the abdomen and legs.

Present illness: The patient stated that she had colds practically all winter. Eight weeks before her admission she had a mild attack of influenza and recovered from this, but three or four days later she noticed swelling of the ankles. She went to bed and in a few days her face swelled. She remained in bed for a few days, and the edema disappeared. She felt fairly well and got out of bed, but two or three days later the swelling returned. Following this the swelling tended to increase, even though the patient was in bed constantly. During this time her medical management included forced fluids, which were continued until her admission to the hospital. She had some headaches, was extremely nervous, and did not sleep well. Shortness of breath was in evidence from the beginning of her illness, but was more marked during the last two weeks. She had considerable wheezing in the chest and coughed rather constantly, raising some phlegm. Her appetite was poor throughout her illness, and for the last two weeks she had considerable nausea, with occasional vomiting of phlegm. About six weeks after her admission she had a "toxic poisoning" with gen-

eralized rash and swelling of the face, which closed the eyes. With this there were nausea, vomiting, and the diarrhea, and much itching. Twitching of the muscles was not experienced. Her abdomen was bloated, and she suffered considerable abdominal pain, particularly on the left side. Her urine output at first averaged from thirty to forty ounces a day, but during the last four weeks of her illness the quantity diminished, with partial anuria during the last week. She complained of considerable pain and burning, but there was no nocturia. Her menses were normal.

Family history: Her father died of cerebral hemorrhage at fifty+. Her mother is living, is fifty-eight years old, and has some bladder or kidney trouble. One brother died of pneumonia at twenty and a sister of diabetes at twenty-five. One brother is living and well.

Past history: The patient had measles and mild diphtheria during childhood. Before a tonsillectomy, in 1916, she had frequent attacks of acute tonsillitis, but has had none since. About a year ago she had extensive dissection, with removal of the lymph glands on the right side of the neck. These had been enlarging for five years, but there was no glandular enlargement elsewhere. She had considerable throat trouble, and her voice became hoarse very easily. This, of course, was more noticeable because of her occupation.

Physical examination at the time of admission to Abbott Hospital, May 3, 1926: The patient was a woman of medium size, weighing 134

\*From the Medical Division of the Nicollet Clinic, Minneapolis.



pounds. Her height was 64 inches. Her temperature was 98.6°; pulse, 100; systolic blood pressure 142 and diastolic 94. She was a decided brunette, but there was excess pigmentation about the face, neck, thorax, and abdomen. Evidence of recent toxic dermatitis or urticaria was still present. The nephritic pallor of subacute nephritis was strikingly absent. The teeth showed much restorative dentistry; the tonsils were well removed; and there were several enlarged lymph glands, from 0.5 to 1.25 cm. in diameter, in the left anterior and posterior triangles, which were discrete and fairly movable. Recurrence of two enlarged glands on the previously operated right side was present.

There were coarse, moist râles and rhonchi over the bronchial tree in both lungs, and signs of small bilateral hydrothorax.

The abdomen was full, and moderate ascites was present. No masses were felt.

There was soft, pitting edema of the legs, thighs, back, and hands, and peripheral arteriosclerosis++.

Pelvic examination by the gynecological consultant was negative.

Physical examination was otherwise negative.

Retinal examination showed slight congestion of the discs. There were no hemorrhages or spots. The arteries showed definite retinal arteriosclerosis, with increased arterial reflex and a few moderate pressure effects at arteriovenous crossings.

The record of the clinical pathological findings, blood pressure and weight during the time the patient was observed by us is shown in Tables I and II.

TABLE I

Date	React.	Sp. G.	Alb.	Sugar	Casts	Blood	Pus	TBC	PSP	BUN	B. P.	WT
5/ 3/26	Acid	1,012	+++	0	0	0	++++		5%	54.	136/94	132
5/ 4/26	Acid	1,015	++ ++	0	0	Occ.	per HPF				144/98	
5/ 5/26	Acid	1,014	+++	0	One fine brown granular	1-2 per HPF	++ ++ packed				136/96	
5/ 6/26	Acid	1,013	++ ++	0	0	0	++ ++				144/94	
5/ 7/26									Trace	32.2	137/90	
5/ 8/26	Neut.	1,015	+++	0	0	1-2 per HPF	++ ++ packed					
5/ 9/26												122
5/10/26											145/100	
5/12/26	Acid	1,015	++ ++	0	0	1-2 per HPF	100- 150 per HPF				128/94	
5/13/26												119
5/14/26										52		
5/15/26	Alk.	1,018	++ ++	0	0	0	100- 150 per HPF					
5/17/26												114¼
5/19/26	Alk.	1,020	++ ++	0	0	Occ.	++				134/92	
5/20/26												113
5/22/26	Uret- eral Cath. Spec.			R.	Large reds resembling diphtheroid bacteria	Occ.	5-8	0				

TABLE I—Continued

Date	React. Uret- eral Cath. Spec.	Sp. G.	Alb.	Sugar	Casts	Blood	Pus	TBC	PSP	BUN	B. P.	WT
				L.	Same	10- 12	8-10	0				
5/24/26								0		53		
5/27/26	Acid	1,017	++ ++	0	0	1-2 per HPF	90- 100 per HPF					
5/29/26	Acid	1,017	++ ++	0	One granular	Occ.	90- 100 per HPF					
6/ 1/26										48.5	154/94	
6/ 3/26	Acid	1,017	+++	0	Several granular	Occ.	8-10 per HPF					
6/ 4/26								0				
6/ 7/26									Trace			
6/ 9/26	Acid	1,016	++ ++	0	Many granular	Occ.	10-12 per HPF				140/94	
6/11/26	Acid	1,013	+++	0	Moderate granular	0	Few 10-12					
6/12/26	Acid	1,018	++ ++	0	Few gran. hyaline & cellular	Occ.	per HPF					
6/16/26	Alk.	1,020	+++	0	Two granular	0	10-12 per HPF					
6/23/26										120		
6/28/26	Acid	1,017	++	0	0	Occ.	4-5 per HPF					
7/22/26	Guinea pig inoculation date of 6/4/26 post-mortem exam. neg. for TBC.											

TABLE II

Date	Hg.	RBC	WBC	Lymph.	Mono.	PMN	Eosin.	Basoph.	Myel.	Remarks
5/ 3/26	75	3,810,000	9,000	15	13	69	3	.0		
5/18/26	78	4,040,000								
5/25/26			31,000							
6/ 7/26	60	2,810,000	69,400	2.0	1.0	96	.0	.0	Late 1.0	
6/11/26			43,300	3.0	0.5	92	1.0	.0	3.5	Myelocytes, late myelocytes and young PMN's.
6/18/26			42,900	1.0	3.0	94.5	.0	.0	1.5	Many platelets; atypical mononuclears.
6/28/26			27,000	3.5	5.0	91.0	.0	.0	.5	Many platelets, many large size. Many atypical mononuclears with vacuoles and bizarre nuclei; one with two nuclei. Young and large PMN's.



### Comments on history and clinical findings:

The mode of onset, with edema of the legs and face occurring in the wake of respiratory infection, and subsequent disappearance of the same, with prompt recurrence of these symptoms on resumption of activity after rest in bed, is typical of the onset of subacute nephritis with edema. However, a survey of the clinical findings immediately raises some question as to the correctness of this diagnosis. It is unusual for a subacute nephritis to show such a rapid development of renal insufficiency as is represented by a 5 per cent phthalein and a blood urea nitrogen of 54 mgm. per 100 c.c. With such findings present the possibility of this being an acute exacerbation of a chronic nephritis of long standing must receive consideration, although the history furnishes no information to support this supposition. Likewise, the absence of any retinitis is evidence against the existence of a chronic nephritis of long duration. One would also expect a somewhat higher blood pressure level. The moderate retinal sclerosis with a blood pressure of 144/98 (second day under observation) in a woman of thirty-six could well be explained on the basis of moderate hypertension of several years' duration. The peripheral vessels also show evidence of vascular disease in advance of the age of the patient. This possibility is further emphasized by the fact that the history shows that her father died of cerebral hemorrhage in his early fifties. A very noteworthy feature of the urine is the absence of casts and 4+ pus cells. What other kidney condition could be present that would better harmonize with the findings present in this case? Naturally, with a large amount of pus present in the urine, one thinks of kidney infection. Extensive destruction of kidney substances, as in a bilateral pyelonephritis, usually shows an abundance of albumin and pus in the urine, and casts are few in number, or absent. When kidney destruction is extensive, renal insufficiency occurs without the production of retinitis or elevation of blood pressure. This has been conclusively demonstrated experimentally by Anderson.<sup>1</sup> The complaint of abdominal pain and urinary findings is more characteristic of this type of renal lesion than of a subacute nephritis.

Accepting this explanation without an adequate explanation for the extensive edema, we must admit that edema is certainly not a prominent feature in pyelonephritis; on the contrary, it is usually absent. It is not inconceivable that edema could occur under the circumstances,

so it was felt that it was best, tentatively at least, to accept this explanation. The hypothesis that this was a mixed nephritis and pyelonephritis would at once explain everything satisfactorily, but this was too inclusive for rational diagnosis.

### Progress notes and management:

The patient was put on a 28 G. protein, salt-poor, 1,800 calory diet with 800 c.c. of free fluid. Hexylresorcinol, two capsules three times a day, and cough sedative were prescribed. On May 4, 1926, she had some abdominal distress, and the diet given was more than she could eat, so the total caloric value was reduced to 1,200, the protein remaining the same.

On May 7, the patient had a rather severe abdominal pain which continued to be troublesome and the hexylresorcinol was discontinued the following day.

On May 11, the hexylresorcinol was again resumed.

May 20. At this point it was felt that additional information was essential in order to proceed intelligently with the management of the case. The patient had made definite progress in some respects, but none in others. Under fluid restriction and with a salt-poor diet she gradually lost weight, and on her fifteenth hospital day she had lost seventeen and three-fourths pounds with a disappearance of edema. Her daily output of urine during this time varied from 340 to 800 c.c. Her fluid was increased to 1,000 c.c., and she lost a little more weight, the total amount lost since her admission to the hospital being nineteen pounds. The pus in the urine had diminished considerably, but only in these two respects had she registered a gain. From the renal standpoint, the determining factor in prognosis, namely, the renal function, had shown no improvement.

Four days after admission her blood urea nitrogen did drop to 32. This was probably due to her controlled nitrogen intake. A re-check of the phthalein showed only a trace. This was more significant from the prognostic standpoint. On May 14, 1926, the blood urea nitrogen was again 52.

Since her admission we had felt that cystoscopy was indicated, in order to find out where the pus was being produced, but we felt hesitant about recommending it, because we were somewhat doubtful as to the effect that the procedure might have on her renal function and the remaining functioning renal tissue.

On May 22, 1926, a urological examination was made by Dr. Gilbert J. Thomas. The in-

formation obtained, in proportion to that expected, was somewhat disappointing. The bladder was negative. Both ureters were swollen and red. The urine was clear on both sides. Indigo-carmin did not return in fifteen minutes on either side. A small amount of pus and blood (analysis in Table I) was present in the individual ureteral specimens, tubercle bacilli were absent; and bilateral pyelograms were negative.

Considering the result of this examination, it was necessary to abandon the hypothesis that the patient's diminished renal function was due to extensive reduction of kidney substance by a destructive process.

Prior to the cystoscopic examination, the patient's afternoon temperature had been slightly elevated, varying from 99° to 100°. Even with disappearance of the edema, the abdomen remained somewhat distended, and she often complained of pain and distress. Following the cystoscopic examination, a partial anuria was anticipated, and the patient was encouraged to drink all the fluids that she could. We decided to make use of the safety valve afforded by the capillary tissue threshold and bring about a return of the edema, thereby washing the nitrogenous end-products from the plasma into the tissues, if the renal output should prove inadequate. For the next two days the output dropped to 140 and 135 c.c., but then increased to the usual amount, and on the fourth day after cystoscopy the blood urea nitrogen was only 53 mgm. However, the patient had an unlooked-for reaction, which was difficult to ascribe to the examination. On May 24, 1926, her temperature rose to 101.6°, and she had much abdominal distress, with nausea and vomiting. The abdomen became distended and tense, with tenderness in the right kidney region, and that evening a hard, irregular mass was felt in the upper right quadrant. The distention continued, due to intestinal paresis, and was alleviated to some degree by enemas, pituitrin, and hot stupes.

On May 25, the patient had a white blood count of 31,000.

A medical consultant saw her on May 27, and expressed the opinion that "the general appearance of the patient; lung findings (above the heart); glandular pathology; and the peritoneal flareup with free fluid and kidney findings, appear to rest on the same basis. Diagnosis: chronic tubercular glands, pulmonary, peritoneal; kidneys with secondary pyogenic invasion of areas caseated out through pelvis and adrenal glands."

June 1, 1926. The blood urea nitrogen was 48.5.

June 2. For the preceding few days the patient had shown some improvement. Her abdomen was softer, but a mass was felt as before. Fundus examination showed no findings in addition to those of the previous examination. A 28 G. protein diet was resumed.

June 3. Alpine sunlight treatment to abdomen three times a week was prescribed.

June 4. Abdominal mass was not felt.

June 6. Bedside film of chest, lungs and mediastinal structure was negative. There was no evidence of tuberculosis in the lungs or glands. There was a small amount of fluid in the right pleural cavity.

June 7. Phthalein test showed a trace in two hours and ten minutes. White blood count was 69,400, with polymorphonuclears 96 per cent. (Complete report in Table II.)

June 9. The patient was seen by a second medical consultant who concurred with our opinion that because of the increased pigmentation, glandular enlargement in the neck, and unusual blood picture, the possibility of Hodgkin's disease must be entertained. This did not explain the renal insufficiency, however.

June 11. The white blood count was 43,300, with polymorphonuclears, 92 per cent. (Complete report in Table II.)

June 14. The patient continued to complain of abdominal distention, and the abdomen was tense. One half c.c. of surgical pituitrin was ordered.

June 15. There was much less distention.

June 16. There was more distention, and the pituitrin was increased to 1 c.c. every five hours. The urine sediment had shown a rather remarkable change in the past three weeks. The pus had practically disappeared and few-to-numerous granular casts and a few hyaline and cellular casts were present in the specimens examined.

June 17. There was less distention and the pituitrin was reduced to 0.5 c.c. The patient was listless and exhausted and was vomiting.

June 18. The white blood count was 42,900 with polymorphonuclears 94.5 per cent.

June 19. Pituitrin was given every eight hours.

June 20. The patient had insomnia and increased restlessness. The lungs were fairly clear except for a friction rub below the left axilla. The abdomen was distended and visible gastric peristalsis was present, suggesting intrinsic or extrinsic pyloric obstruction.

June 22. The patient was stuporous (uremic), with involuntary urination. Pituitrin was discontinued.

June 23. The blood urea nitrogen was 120.



June 24. The stupor was increased and there was entire loss of sphincteric control. The abdomen was fairly soft. An irregular mass was again felt about 3 cm. below the tip of xiphoid.

June 25. Fundus examination showed no findings in addition to those of previous examinations.

June 26. The patient was in a stupor, except when she had pain, due to cramping in the muscles of the thighs and legs. Dehydration was evident. White blood count was 27,000 with polymorphonuclears 91 per cent.

July 1, 1926. There had been Biot's breathing during the last eighteen hours, with increasing stupor and cramping in the legs prior to death from respiratory failure. It was considered that the patient died a uremic death.

Clinical diagnosis:

1. Uremic coma.
2. Subchronic nephritis with edema.
3. Peritoneal tuberculosis and tuberculosis of the retroperitoneal and cervical lymph glands.
4. Hodgkin's disease (?).

Postmortem examination was performed by the Department of Pathology, University of Minnesota. The following is an abstract of the essential findings:

The body was that of an emaciated white female weighing ninety pounds. Edema of the ankles was present. The body was embalmed.

Abdomen: Peritoneal surfaces were covered with a fibrinous exudate, evidently containing some pus. The exact amount of fluid increase could not be determined, on account of the embalming fluid.

Pleural cavities: The left pleural cavity contained 25 c.c. of bloody fluid with small amounts of pus and fibrin. There was a small amount of bloody fluid in the right pleural cavity.

Heart: The heart weighed 240 grams with large vegetation on the aortic flap of the mitral valve about 1 cm. thick, covered by thrombus. This was considered a secondary acute bacterial endocarditis.

Aorta: The root of the aorta showed slight atherosclerosis.

Spleen: The spleen weighed 50 grams. The capsule was covered with a fibrinopurulent exudate. The corpuscles were prominent.

Liver: The liver weighed 1,600 grams. There was fibrinopurulent exudate over the surface. The liver was light and rather greasy on section, with slight diffuse mottling.

Pancreas: Surrounding the pancreas there were a number of small, whitish areas. These were also noted in other places throughout the

peritoneal cavity; namely, the diaphragm and in the region of the kidneys. The borders of the pancreas were not well defined. On sectioning, the organ showed definite blue to black areas in the substance of the gland.

Kidneys: The left kidney weighed 230 grams, and the right 200 grams. The external surfaces were smooth, but considerably paler than normal. On section, the markings were somewhat indistinct. The cut surfaces also were much paler than normal. The cortex, however, was of normal thickness. The pelvis of the left kidney was dilated and contained seropurulent fluid. The mucosa of the bladder was congested.

Uterus: The uterus contained a small intramural myoma and a dermoid cyst of the right ovary 5 cm. in diameter. Retroperitoneal lymph glands were enlarged, but not caseous.

#### MICROSCOPIC EXAMINATION

Pancreas: Many areas showed complete necrosis, that is, gangrene; nearby areas contained necrotic fat. This was antemortem, as evidenced by the presence of surrounding polymorphonuclear lymphocytes. In and around the pancreas there was considerable cellular exudation, many of the cells being lymphocytes and large mononuclear leucocytes, with a considerable proportion of mononuclear forms. Definite proliferation of the connective tissue between the pancreatic lobules was noted. Lymphocytes were scattered throughout the tissue.

Kidney: No evidence of any glomerulitis was present. The tubules, especially the convoluted tubules, were swollen, and the cytoplasm had undergone albuminous degeneration. In some places hyaline granules were noted. Casts and albumin were present in the lumina of many of the tubules. There was *no evidence of any nephritis*, either of the glomeruli or of the interstitial tissue. There was no arterial or arteriolar disease sufficient to produce renal insufficiency.

Liver: The liver showed very marked metamorphosis with very little normal liver tissue remaining.

Except where above noted, the viscera and tissues examined were normal. The head and organs of the neck were not examined.

#### PATHOLOGICAL DIAGNOSIS

1. Chronic suppurative pancreatitis with acute exacerbations and gangrene.
2. Severe nephrosis.
3. Secondary acute bacterial endocarditis.
4. Dermoid cyst of the left ovary.
5. Intramural myoma of the uterus.

## COMMENTS ON NECROPSY FINDINGS

It was expected that the post-mortem examination would show the underlying cause for the unusual clinical findings which presented themselves during the time that the patient was under our observation. The questions we desired answered were: (1) cause of hyperleucocytosis; (2) presence or absence of Hodgkin's disease; (3) the part that tuberculosis played in the production of the picture; (4) type of kidney lesion present.

In endeavoring to find a cause for the extreme leucocytosis we did not give infection the consideration that it deserved. We felt that a white blood count of 69,400 was too high to be explained on the basis of infection and was more consistent with Hodgkin's disease. In this condition, white blood counts from 50,000 to 75,000, with a polymorphonuclear leucocytosis are not uncommon. The enlarged cervical glands and irregular mass in the abdomen made this a probable diagnosis. A survey of the literature, however, shows that hyperleucocytosis with white blood counts of 75,000, with infection, are not unknown. Rice<sup>2</sup> reports two cases, one an abscess of the groin with a white blood count of 400,000, and the other a case of acute general pneumococcic peritonitis, with a white blood count of 192,000. In each case there was a marked drop, with return to nearly normal on the fifteenth day in the first case, and to normal in the second case. These cases were examined for evidence of leukemia. This author quotes from the literature the following high white blood counts in infection: (1) Bunting, abscess of the liver, 104,000; (2) Herschfield and Nothe, primary peritonitis, 190,000; (3) Lehr (quoted by Hernberg), pneumonia, 150,000; (4) Grawitz (quoted by Faught) inflammatory leucocytosis, 168,000; (5) Felsenthal (quoted by Webster) diphtheria, 148,000. Seitz<sup>3</sup> reports two cases and quotes from the literature ten other cases of pertussis-bronchopneumonia, in which the white blood count ranged from 89,000 to 233,000.

These unusually high counts are reviewed for the purpose of demonstrating the occurrence of hyperleucocytosis in infection.

The rather severe intermittent abdominal pain which our patient suffered should have received more consideration than we gave it. Deaver<sup>4</sup> reports a case of subacute pancreatitis with intermittent abdominal pain of six weeks' duration. If we had been fully cognizant of the situation it is possible that a surgical consultant would

have been called in to decide upon the advisability of opening the abdomen, instead of interpreting the blood picture in the light of Hodgkin's disease.

It must also be mentioned that nephritis itself may cause a high white blood count. Tillgren<sup>5</sup> reports two cases of nephritis with nitrogen retention, with white blood counts of 38,000 and 48,000, in which necropsy showed genuine contracted kidneys.

The necropsy examination of our patient showed no evidence of Hodgkin's disease or tuberculosis. The examination, however, did not include the glands of the neck.

The macroscopic and microscopic examination of the kidneys showed only a tubular degeneration. There was no glomerulitis, nor change in the blood vessels to account for the greatly reduced renal function. We expected to find rather small, fibrosed kidneys; on the contrary, the kidneys were normal in size, and their gross appearance was not suggestive of nephritis. This was surprising, in view of the almost complete failure of dye function, the high level of nitrogen retention, and death in uremic coma.

It is now necessary to inquire into extrarenal causes of deficient dye function and nitrogen retention in order to determine if any of these factors could have contributed to the patient's condition. The common extrarenal causes of marked nitrogen retention are: (1) starvation<sup>6</sup>; (2) intestinal obstruction<sup>7 and 8</sup>; (3) acute infection<sup>9</sup>, with tissue protein destruction; (4) proteose intoxication. In experimental acute sterile pancreatitis, Whipple<sup>10</sup> succeeded in producing a proteose intoxication with an accompanying picture that was not unlike that of intestinal obstruction.

In experimental intestinal obstruction, studied by McQuarrie and Whipple,<sup>8</sup> where marked nitrogen retention occurred, the phthalein output remained above 20 per cent except in one instance, where it dropped to only a trace. Since the test was performed shortly before the death of the animal, this single low result is open to question. On further study,<sup>11</sup> they felt that the nitrogen retention and diminished dye output were due to a disturbance of the elemental function of the kidneys as to urea, sodium chlorid, and phenolsulphonaphthalein excretion and was in all probability due to temporary injury of the kidney cells, since in their experiments extrarenal factors were eliminated. As stated by the authors, their study affords new evidence in favor of the view that the function of an organ can be



disturbed for a time without a demonstrable anatomical lesion.

Phenolsulphonephthalein may be destroyed in its passage through the liver before it reaches the renal exit. Cyanosis, when present, causes a marked reduction in its output and a large portion of the dye that passes through the portal circulation is destroyed.<sup>12</sup> The unrecovered fraction of 20 to 40 per cent in the normal individual probably fails of excretion because of destruction by the liver. It is conceivable, also, that under certain conditions the liver may destroy even more.

In considering the case under discussion in the light of the above findings, it is improbable that any of the conditions enumerated were responsible for producing the clinical laboratory picture of renal insufficiency, unless proteose intoxication, due to pancreatitis, was a factor. A review of the history indicates that the renal insufficiency probably preceded the onset of this complication.

The history and findings scarcely permit our considering this as other than an unusual case of nephritis with a complicating subacute pancreatitis. A survey of the literature indicates that only a very few cases with marked nitrogen retention and complete absence of dye excretion, without evidence of true nephritis at necropsy, have been reported in the past ten years. Jackson<sup>13</sup> reports a case very similar to the one here presented. His patient had aortic insufficiency with good compensation and developed marked edema, nocturia, and nausea, with a large trace of albumin and casts and some red blood cells in the urine. The phthalein output was 15 per cent and blood urea nitrogen 57.8 mgm. On a nephritic regime the blood urea nitrogen dropped to 20.7 mgm. However, the patient became worse and developed a sinus infection, which was drained. Later the phthalein output was only a trace, and the blood urea nitrogen was 51.3 mgm., and the clinical impression was that of a rapidly advancing nephritis. Necropsy findings were those of malignant endocarditis, vegetative pleuritis, and pericarditis. The kidneys showed *no nephritis*, only old infarction in the upper poles of each kidney.

Lemierre, Deschamps and Bernard<sup>14</sup> report a well studied case, with death in uremic coma following a diarrhea of three weeks' duration, in

which "the nitrogen retention reached fifteen times the normal in the blood." Phthalein estimations are not recorded. The kidneys at autopsy appeared normal, and histologic study revealed normal glomeruli, renal parenchyma and vessels. They discuss various possibilities, but are unable to offer any explanation for the unusual findings.

The findings in our case are unusual enough and of sufficient importance to justify a review of the factors which might come into play in producing failure of dye excretion and nitrogen retention. We are forcibly reminded of the fact that while the usual tests for renal function may generally be depended upon to furnish definite information as to the amount of functioning tissue in the kidney, it is hazardous to make any definite predictions as to what kind of kidney will be found at necropsy. Furthermore, in the beginning of treatment in this case, the laboratory findings indicated a very poor prognosis. In retrospect, we must admit that had it not been for the complicating pancreatitis, the kidneys alone held forth the possibility of complete recovery.

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## MODERN ASPECTS OF THE DIAGNOSIS AND TREATMENT OF TUBERCULOSIS—PART III—Continued

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### XIV.—THE TREATMENT OF PULMONARY TUBERCULOSIS BY SURGERY

Nature has taught us that tuberculous lesions heal better when the organ involved is resting. The more rest the organ can be given, the more rapid and permanent will be the healing. Therefore, in addition to the general rest which we give the entire body of a tuberculous patient special methods have been devised to produce more rest. Surgery has been introduced in an attempt to aid nature and today we find the chest is beginning to yield up its secrets to the surgeon just as the abdomen did a few years ago. Among the surgical procedures which have been found of value are artificial pneumothorax, extrapleural thoracoplasty, and phrenicotomy.

*Artificial pneumothorax.*—There are severe or extensive lesions which fail to respond to the usual methods of treatment plus the chest splint and postural rest. In such cases more drastic procedures must be used in order to bring about the desired rest. For this purpose artificial pneumothorax has proved its excellence over and over again. Those who have observed a lung during the process of respiration can appreciate how extremely difficult it would be to heal even a small lesion while the lung is performing its functions. Nature taught us that when a part of the lung becomes diseased at least that part should be put at rest. For example, when tuberculosis attacks a part of the lung strong adhesions are often thrown out to the chest wall in an effort to immobilize the affected part. In other cases rupture of the lung has occurred, thus producing spontaneous pneumothorax. In some cases it was observed that after spontaneous pneumothorax occurred the disease improved and the patient's working capacity was at least partially restored. Again it is not uncommon for extensive pleural effusion to form, which often acts as a splint to the lung, thus aiding nature in healing the pulmonary disease. The splint effect is valuable, but the fluid may become troublesome. These conditions having been demonstrated by nature, man began to wonder why he might not aid her by an artificial procedure. Until recently we believed that the artificial pneumothorax idea was one of the most modern times, but Dr. A. K. Krause, in 1922, revealed

a reference to a practice by the Greeks of injecting air into the pleural cavity as a therapeutic procedure as early as the fourth century B. C. Krause points out further that Young, in 1815, partially grasped the underlying principle of the artificial-pneumothorax procedure.

The objects of artificial-pneumothorax treatment are chiefly to immobilize the diseased lung in order that the healing processes may take place more rapidly than under ordinary conditions.

In case of abscess and excavation the walls of the cavities are thrown in apposition thus making the permanent obliteration of the cavity possible. It has been shown that collapse of the lung retards the growth of the tubercle bacillus. It also stimulates rapid growth of fibrous tissue in the neighborhood of the lesion.

Indications: In pulmonary tuberculosis pneumothorax is especially indicated when the disease is limited to one side and is in an advanced stage and the condition has failed to respond to more usual methods of treatment. Such cases are ideal for the treatment, but they are rarely found. Usually before the disease is advanced on one side it has made its appearance in the opposite lung. If, however, not more than one-half of one lobe of the good lung is involved and the disease in that lobe can be rendered inactive one may proceed to collapse the worse lung with a fair degree of safety. In such cases, however, the possibility of rendering the disease active in the better lung should be thoroughly explained to the patient. On the other hand many are of the opinion that reducing the toxicity of the patient by collapsing the worse lung allows more rapid healing of the disease in the other lung.

I am becoming more and more convinced that more mistakes have been made by too late than by too early decisions to collapse lungs by artificial pneumothorax. How frequently we see patients with unilateral disease allowed to lie in bed and develop advanced bilateral disease with no attempt having been made to control the process by artificial pneumothorax.

In recent years it has been shown that gas injected into the pleural cavity has a selective action upon the diseased pulmonary areas; that is, a small amount of gas injected near the base of a lung will be found to collect around the site



of the pulmonary lesion even though it be at the apex, thus resulting in a partial compression of the diseased area and leaving the healthy lung tissue to perform its usual functions. The discovery of this fact has proved a real advance in pneumothorax therapy inasmuch as it has taught us that it is possible to maintain a partial collapse of both lungs simultaneously. This has extended the field of usefulness of artificial pneumothorax therapy in tuberculosis; however, cases are not common in which adhesions are absent so as to make partial collapse possible on both sides. Selective collapse is possible only if adhesions are absent.

In pulmonary abscess collapse of the lung is often of value particularly when the abscess is in a basal lobe where natural healing is very difficult. The acute abscesses often respond to the treatment in a very short time while in chronic cases the abscess walls may have become so thickened that complete collapse is impossible. In such cases improvement is usually slow, slight, or altogether absent.

Artificial pneumothorax may be employed also in cases of unilateral bronchiectasis with good results.

In pulmonary hemorrhage which refuses to yield to the usual methods of treatment artificial pneumothorax is a godsend. It is sometimes difficult, however, to ascertain as to which lung is the source of the hemorrhage. One occasionally sees cases so exsanguinated from pulmonary hemorrhages that all hope has vanished, yet as a last resort artificial pneumothorax arrests the hemorrhage and aids in restoring the patient to reasonably good health.

**Contra-indications:** In pulmonary tuberculosis, artificial pneumothorax treatment should usually not be begun until the rest treatment has been given a trial and found not sufficient. There are many exceptions however, particularly in cases who cannot or will not take the rest treatment or those with acute and rapidly progressive processes.

Artificial pneumothorax is not usually indicated with active involvement in an entire lobe of the "good" lung except as a palliative measure, though really every case must be considered by itself. Some tuberculous complications, such as intestinal tuberculosis and laryngeal tuberculosis, were in the past regarded as contra-indications to artificial pneumothorax but with the aid of heliotherapy and other special methods of treatment, pneumothorax may result in reduction of toxemia and improvement of the complications.

In non-tuberculous complications, such as seri-

ous heart and kidney diseases, asthma, and severe emphysema, pneumothorax is usually contra-indicated.

**Method:** Having in mind the type of cases that may hope for benefit or even a cure from artificial pneumothorax we shall consider, briefly, the usual procedure in the collapse of a lung.

The initial procedure should be carried out in the hospital. However, in urgent cases, such as those with hemorrhage, it may be done in the home. It aids greatly to have a fluoroscope available in order to control the degree of collapse, displacement of mediastinum, etc.

When the apparatus is in position the patient takes the reclining posture lying on the side of the "good" lung. If the patient is of the very nervous type it is a good practice to give one-sixth grain of morphine sulphate hypodermically from one-half to one hour before the initial puncture is made.

The most common place to make the puncture is about the level of the fifth to seventh interspaces in the midaxillary or, still better, the anterior axillary line. The chief advantages of this site are: (1) the muscles of this area are thin; (2) the interspaces are wide; (3) the pleura is usually free from adhesions. If, however, from physical and *x*-ray examinations one finds evidences of adhesions in this region some other site free from adhesions must be selected.

Having selected the site of the puncture this small spot only is infiltrated with 0.5 per cent solution of novocaine. A special needle with a blunt end may be inserted directly but it is much easier after a small incision has been made through the skin with a sharp tenatome. For the initial treatment the Salimen catheter has proved an excellent instrument for reaching the pleural cavity. When the needle or catheter has entered the pleural cavity, it is attached to the manometer, which, in ideal cases, registers a distinctly negative pressure with good oscillations corresponding with the patient's respirations. A very small quantity of gas is allowed to flow into the pleural cavity after which the manometer readings are carefully studied. A similar small amount of gas is injected every minute or so. If the manometer readings show good oscillations and the reading is distinctly negative thus indicating that the gas is reaching the pleural cavity properly, larger amounts may be injected until the patient has received a total of 150 to 250 c.c. The amount given will depend somewhat upon the manometer readings; that is, if the readings remain well on the negative side as much as 250

c.c. of gas may be injected safely, whereas if the negative pressure becomes less marked a smaller amount of gas may be injected. The needle or catheter is then withdrawn and the wound sealed with collodion. Two or three days later another fill of gas is given. Here, again, the amount given will depend somewhat upon the pressure indicated by the manometer, but should rarely exceed 300. The procedure is repeated two or three times at intervals of about three or four days. By this time the lung should be reasonably well collapsed, and the intervals between fills may be lengthened in some cases to a week or ten days, depending upon the rapidity with which the pleura absorbs the gas. This may be determined best by *x*-ray examinations. Later the intervals between treatments may be extended to three weeks or longer, but this will vary much with individual cases. "Refills" can very well be given through the fine needle (19 gauge) through which the novocaine is given.

In cases of severe pulmonary hemorrhage the patient may require from 400 to 600 c.c. and in very rare cases even more at the initial injection in order to stop the bleeding.

The question arises as to how long a lung should remain collapsed. Complete collapse should usually extend over a period of from three to five years depending upon the rate of healing of the lesion. When healing is complete the lung may be allowed slowly to expand, but I am convinced that just enough gas should be given to keep the visceral and parietal layers of the pleura apart for a long period of time. This will prevent the formation of adhesions, and in the event of reactivation of the tuberculous process the lung may be easily collapsed by the injection of more gas. There are some new acute lesions which can be sufficiently controlled and healed by pressure kept up even less than a year.

Dangers of the artificial pneumothorax procedure and how to avoid them: Usually the first danger to avoid is that of pleural shock. This may occur as the needle comes in contact with the pleura, during the injection of gas or when the needle is withdrawn. The symptoms are not unlike those seen in pleural shock from other causes such as manipulations of the pleura during empyema operations.

If the patient is given one-sixth grain of morphine hypodermically about an hour before the procedure and the region of the site of puncture is well anesthetized the danger of pleural shock is greatly reduced.

Another danger is that of embolism, which

may be due either to gas or blood clot. It is possible to produce gas embolism by the needle entering a vein in the chest wall; this, however, is probably not a very usual source. A much more common source is said to be from a wound in the lung produced either by the needle directly or from tearing adhesions. When such a wound is made, air may find its way into the pulmonary veins either from the alveoli or the needle. It is obvious that the number of cases of embolism, whether due to blood clot or to gas may be reduced by carefully observing the manometer reading and by avoiding injury to the lung.

If the patient is greatly emaciated so that the tissues have very little tone, it sometimes happens that gas escapes from the pleural cavity along the course of the needle immediately after it is withdrawn resulting in surgical emphysema, which can extend along the subcutaneous tissues even to the shoulder and down to the wrist. Though the patient may be alarmed, he can be assured that the gas will be absorbed in a few days leaving no detrimental effects. This condition may also be brought about by the use of a very large needle, or violent coughing immediately following withdrawal of the needle and in cases when the intra-pleural pressure has been high. If, however, the skin is manipulated and considerable pressure made over the site of the puncture immediately after the withdrawal of the needle this subcutaneous emphysema may be prevented in many cases.

Deep emphysema sometimes occurs when the gas makes its way under the visceral pleura and spreads by way of the interstitial tissues of the lungs to the root and thence to the mediastinum. From here it spreads upward and appears in the suprasternal space. Although certain pressure symptoms develop the condition causes no real harm.

The presence of a cavity or a caseous area near the surface of a lung may lead to spontaneous perforation during the course of pneumothorax treatment. After perforation occurs the temperature usually increases two or three degrees and pleural effusion forms. When a lung perforates, the pleural cavity usually becomes infected resulting in empyema and this is followed by amyloidosis and death within six months to a year unless special empyema treatment is administered.

Pleural effusion is a common complication in artificial pneumothorax treatment. In fact, most authorities agree that in more than 30 per cent of the cases an effusion appear at some time



during the course of the treatment. There may appear a small amount of clear serous fluid which never becomes sufficient in amount to cause trouble. Again the fluid may continue to form slowly until a large amount has accumulated which may remain clear or become purulent. The vast majority remain clear.

With the first appearance of fluid with artificial pneumothorax treatment the patient is given absolute rest in bed, heat may be applied to the chest and medication administered if necessary to make the patient comfortable. If a considerable amount of fluid forms and there is no indication of its being absorbed it is well to withdraw it and replace it with air. In the vast majority of cases the fluid remains clear and should not be interfered with as it will usually disappear spontaneously. The same is true of most collections which become purulent. They are harmless usually and should be dealt with as "cold abscesses," that is, usually left severely alone.

When the desired results have been obtained from the artificial pneumothorax treatment the gas injections may be discontinued, and the lung is given an opportunity to expand. Judgment as to when this should be done is most difficult. Unfortunately, in some cases fibrosis has become so extensive or the visceral pleura is in such a condition that the lung can only partially expand while in others no expansion is possible. This is one of the possibilities which should always be explained to the patient before artificial pneumothorax is begun.

When the treated lung has properly and completely expanded the visceral pleura comes in contact with the parietal pleura and friction rubs are heard over the greater part of the treated side. Usually extensive adhesions result in almost complete obliteration of the pleural space which makes artificial pneumothorax treatment ever after impossible. Therefore, it is often advisable, as before mentioned, to give enough gas to keep the visceral and parietal layers apart for a long time after the lung is apparently healed.

In writing of artificial pneumothorax a few years ago Riviere said: "No more hopeful ray of sunshine has ever come to illumine the dark kingdoms of disease than that introduced into the path of the consumptive through the discovery of artificial pneumothorax."

Recently Krause said: "All in all, artificial pneumothorax represents by far the greatest advance yet made in the special treatment of pulmonary tuberculosis.

"Time brings no dimming of its repute. Enlarging experience only adds to its lustre.

"Experience suggests also that its scope will enlarge; that after ten years of trial and experiment we are settling down into a period of its more intelligent employment, which will lead to its further development."

The physician should not become so overenthusiastic as to administer artificial pneumothorax in every case of pulmonary tuberculosis, neither should he become so ultraconservative as to procrastinate too long. If he exercises good judgment in the selection of cases he will find this procedure a tremendous help in the treatment of pulmonary tuberculosis. Indeed it is believed by many workers that artificial pneumothorax administered at the right time increases the patient's ultimate outlook approximately 50 per cent.

Before artificial pneumothorax is begun the visceral and parietal layers of pleura may have become adherent in places thus partially obliterating the pleural space. In such cases complete artificial pneumothorax may be impossible. After pneumothorax has been begun one frequently is able to see on fluoroscopic or stereoscopic examination one or more bands of adhesions extending from the chest wall to the partially collapsed lung, thus preventing complete collapse of the area most in need of this treatment. For such cases Jacobeus devised a very ingenious method of cauterizing the adhesions. By the use of a thoroscope he explored the pleural cavity and upon locating the adhesion burned it off with a small electric cautery. At first this procedure appeared to solve the problem of such adhesions, but it was later learned that not infrequently the adhesion contains a cone-shaped portion of lung tissue extending almost to the attachment to the chest wall. Therefore when the adhesion was burned off a direct communication was made between the lung and the pleural cavity which usually resulted in contamination of the pleural cavity. It has been advocated also when such adhesions are present to do a thorocotomy in order that the surgeon may carefully examine them and determine where they may be severed safely. Unfortunately in many cases a greater part of the pleural cavity has become obliterated, thus large areas of the lung are so bound to the chest wall that collapse by artificial pneumothorax is impossible. If, however, only the apical portion of the lung is adherent, air injected into the pleural cavity below this may be made to produce sufficient pressure to partially im-

mobilize the adherent apex and thus bring a subsidence of symptoms. It is remarkable what numbers of adhesions and of what strength can be overcome by low pressures and long patience, and this is the ideal treatment. However, extensive adhesions do often prevent pneumothorax or make it of no avail. It may be quite impossible to locate any free pleural space even with numerous attempts. In such cases frequently, but not always, more drastic surgical measures are indicated.

*Extrapleural thoracoplasty.*—When artificial pneumothorax cannot be given because of adhesions extrapleural thoracoplasty should at least be carefully considered. The purpose of this procedure, just like artificial pneumothorax, is to effect healing of primarily unilateral disease by collapse and functional rest of the affected lung. The rationale of thus inducing lung collapse and immobilization; the promotion of healing of tuberculosis; and the results already obtained show it a very important adjuvant to the standard hygienic rest treatment. The collapse is not always so complete as in a successful pneumothorax, but is more constant and uniform. In pneumothorax the degree of collapse varies constantly; it may be complete immediately after a refill has been given, but almost from that moment the lung begins to expand until the pleura is refilled again. With thoracoplasty there is no variation. On the other hand, collapse by extrapleural thoracoplasty is permanent, so there is no possibility of re-expansion after healing is complete nor re-expansion in the event of acute involvement of the better lung, such as pneumonia.

The operation was first performed by Professor Friedrich at Marburg, in December, 1907, on the advice of Professor Brauer, the internist on the same clinic. The patient had far advanced disease, and because of adhesions pneumothorax was impossible. Brauer suggested to his surgical colleague that if resection of the ribs were done the lung would collapse with the chest wall. Friedrich removed the entire length of the ribs from the tenth to the second together with the periosteum and intercostal muscles. The patient made a remarkable recovery and according to a recent report of Brauer is alive to-day and regularly goes about his business. Thus was a new measure instituted in the fight against tuberculosis.

The typical indication for thoracoplasty, as outlined by Amberson, is a chronic fibrocavernous predominately unilateral pulmonary tuberculosis,

which has failed to respond to a thorough trial of more conservative measures. He divides the cases into four groups:

1. Those with long standing extensive unilateral diseases, which are seen late in the course of the malady.
2. Those which have responded to a period of sanatorium treatment, and in which the sub-acute or chronic ulcerative and caseous lesion has been changed to a fibrocavernous one.
3. Those without constitutional symptoms, but with unhealed cavities as evidenced by cough and expectoration.
4. Those in which the contraction and massive fibrosis have caused distortion and displacement of the heart and great vessels with subsequent circulatory embarrassment.

As Singer expresses it, "one puts the tuberculous patient to bed and carries out the standard treatment; if that does not help one does a pneumothorax; and if that does not help the majority of conservative clinicians believe that thoracoplasty is the next step."

Archibald says that when the resistance is good, it has been found that clinically demonstrable intestinal tuberculosis does not offer in itself a serious contraindication. The same is true of laryngeal tuberculosis. In several patients one or the other of these complications was present, and after thoracoplasty, cleared up.

Of course, surgery should be attempted only when there is a reasonable prospect of doing good and the medical treatment is failing. The patient treated by surgery must also necessarily continue full hygienic rest treatment, heliotherapy, fresh air, in short, everything that medical experience has proved to be beneficial. The surgical measure is just a surgical incident in a long medical treatment.

*Technic:* The type of anesthetic has long been the bone of contention, and opinion to-day is greatly divided as to the best method of anesthesia, for use in extrapleural thoracoplasty. Archibald prefers novocaine-adrenalin combined with nitrous oxide-oxygen. Sauerbruch, however, in many cases, uses ether anesthesia, especially where the daily output of sputum is small. It would seem that local anesthesia plus nitrous oxide-oxygen is the anesthetic of choice, as less anesthesia is necessary and dangerous symptoms need not be expected. In the hands of one with wide experience local anesthesia is sufficient.

The technic of extrapleural thoracoplasty as practiced to-day is for the most part that of Sauerbruch, a compromise between the extensive



resection of the Brauer-Friedrich technic and the narrow resections of the upper seven or eight ribs of the earliest Wilms operation. It is this technic or slight modifications of it that is being used by surgeons of the greatest experience in this work.

The patient is placed on the table on the better side with both thighs flexed; a sandbag is placed under the loin, another placed beneath the thighs is held firmly with a strap to prevent the patient from slipping. The upper half of the table is raised 30 degrees. If the patient is orthopneic, he sits across the table and leans forward on the shoulders of an attendant. Some operators use this sitting posture in every case.

A hook-shaped incision is made beginning about 6 cm. from the 4th vertebral spine and continuing straight down to the tenth rib, where it curves forward to the posterior axillary or midaxillary line. Then the ribs are exposed and best removed in the following order: 11, 10, 9, 8, 7, 6, 5. This constitutes the first stage of the operation. The incision for the second stage curves from the anterior edge of the trapezius muscle down to the base of the neck posteriorly, 6 cm. distant from the vertebral spinous processes and then runs vertically downward to the seventh rib, where it is made to curve forward around the angle of the scapula, thereby allowing the scapula to be displaced well forward to expose the ribs beneath it. Then the remaining ribs, including the first, are resected.

The ribs are usually removed subperiostally. A longitudinal incision is made in the periosteum, which is then readily pushed away from the lateral flat surface of the rib with an ordinary periosteal elevator. From the posterior surface of the rib the periosteum is freed with greater difficulty, and care must be taken not to injure the pleura. The rib is then sectioned with rib shears, first anteriorly and then posteriorly, as near the transverse processes as possible. The average length of rib resected varies with the case and with the surgeon, Sauerbruch's average resections are about as follows: rib 1, 3 cm.; 2 to 5, 6 to 8 cm.; 6 to 8, 12 to 15 cm.; 9, 12 to 16 cm. A two-stage operation is used quite extensively and its advantages are:

1. Less shock and less sudden change of the circulatory and respiratory mechanism.
2. Fewer toxic products are pressed into the general circulation to endanger latent lesions in the better lung.
3. The first stage generally brings about enough clinical improvement to better the

chances of success of the second stage.

The one stage operation also has its advantages as follows:

1. Much preferred by the patient.
2. Risks of embolus, anesthetic poisoning, and wound-infection run only once.
3. Muscles sectioned only once.
4. More even lung compression, and so less irritation of cavities and fewer chances of lung hemorrhage.

It is usual to allow the lapse of about six weeks between the first and second stages of the operation, the patient's condition permitting. However, this time period varies a great deal with individual surgeons. One encounters patients in whom the operation may have to be done in three or more stages.

After the operation, the wound should be well protected with a gauze and cotton dressing and firmly compressed. The drain used for accumulating serum should be removed in twenty-four to forty-eight hours, and the entire dressing should be changed in forty-eight hours if it becomes wet and stiff. Sauerbruch does not touch the bandage usually until the eighth day, Ochsner was accustomed to leave it even longer, believing it best not to interfere with pulmonary rest. The patient should likewise wear a support about the chest for several months, or until the chest has become fixed by new bone formation from the rib periosteum.

Extrapleural thoracoplasty may be considered a last resort procedure. In other words most patients subjected to this treatment in the past have been regarded as hopeless cases before the operation. When one finds that approximately one-third of these patients are practically cured, and approximately another one-third are greatly improved, one is greatly impressed with the tremendous possibilities of surgery in pulmonary tuberculosis.

#### PHRENICOTOMY

Since the phrenic nerve supplies nearly all of the motor fibres to the diaphragm one-half the diaphragm may be immobilized by sectioning the nerve on that side. Inasmuch as all the rest possible of the diseased lung is desirable and the normal movements of the diaphragm make rest impossible it is obvious that sectioning the phrenic nerve may aid materially in bringing about the desired rest. As the phrenic nerve passes anterior to the scalenus anticus it is easily accessible to the surgeon. Phrenicotomy has brought about reasonably good results in cases of progressive pulmonary tuberculosis when adhesions

make pneumothorax impossible and extrapleural thoracoplasty is not indicated, either because of too much involvement in the better lung or the patient's general condition is too poor to undergo an extensive operative procedure. Again in cases of minimal tuberculosis failing to respond to the usual treatment, phrenicotomy may prove very helpful.

In cases of artificial pneumothorax, phrenicotomy may be employed as a supplementary procedure. This is especially helpful when basal adhesions are causing pain, cough, etc., as well as when adhesions prevent the complete collapse of a diseased basal lobe. Again in hemoptysis from a lung that is not completely collapsed because of adhesions, phrenicotomy may completely stop the bleeding. Even in cases with satisfactory artificial pneumothorax phrenicotomy has been found useful in that refills are necessary

less frequently, pleural effusions are less common and because of the high position which the diaphragm takes after phrenicotomy, the lung has much less space to fill when it is allowed to re-expand, hence the dangers of tearing open cavities, etc., are reduced.

Phrenicotomy is also used in some cases to supplement extrapleural thoracoplasty.

Having in mind these newer measures the physician should watch his tuberculous patients most carefully so that they may not pass the stage at which life may be saved by artificial pneumothorax, extrapleural thoracoplasty or phrenicotomy.

The subject of thoracic surgery is treated in an excellent manner in a book entitled "The Surgery of Pulmonary Tuberculosis" by John Alexander (Lea and Febiger, Philadelphia, Pa.)

## STERILIZATION PROCEDURE AND ITS SUCCESS IN CALIFORNIA INSTITUTIONS

BY C. F. DIGHT, M.D.

President of the Minnesota Eugenic Society

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The recent act of the Supreme Court of the United States in upholding, by a vote of eight to one, the Virginia law providing for the sterilization of mental defectives to prevent their procreation is a long step towards race betterment, crime prevention, and cure for social ills. These ills are caused almost wholly by people of stunted intellects or moral defects who should not reproduce and who are scattered all through society.

The following paragraphs are from a report by F. O. Butler, M.D., Superintendent of the State Home for Feeble-Minded, at Eldridge, California. He states that from among the 16,080 mental defective and insane persons in charge of the State, more than 5,000 have been sterilized.

Dr. Butler says:

"The first case to be operated on for sterilization was in 1910 at one of our state hospitals for the insane. The various State departments, the public welfare organizations of the State and the public in general have become interested in this very important subject and have been supporting it, and with this combined support I am of the firm belief that sterilization in California has come to stay."

"We receive many cases for the purpose of sterilization alone, and after being operated on they are permitted to return to their respective communities. When we learn of a defective mother with many

offspring, the majority of whom are defective, one way or another, it is our policy to try to get her to an institution for the operation in order that she may return and care for the children and not propagate more of her kind. If this is not accomplished it generally means a yearly increase in the family of the incompetent. For instance, in our institution we have many mothers with from one to five children also being cared for. Had the mother been sterilized years ago they could probably have been kept out of the institution, and surely we would not have the children with us."

"After it has been decided by the institution that the individual should be sterilized, the nearest relative or guardian, if any, is written to for consent for the operation. Very little objection is made when the operation is fully explained—in fact, we frequently have requests for the operation from relatives before the subject is mentioned to them. After consent is obtained, we secure permission from the Director Department of Institutions (formerly the State Commission in Lunacy) and the Secretary of the State Board of Health, who are the present State authorities whose signature legalizes the operation. It is not necessary to obtain the patient's consent, although it is done in some instances. When permission is granted by the above authorities, we are at liberty to proceed with the operation."

"There have been no ill effects of any nature in the cases at any of the institutions, for which we are duly thankful—in fact, it has been just the reverse,—a better physical and mental condition, especially with the insane."



"I have a number of men at the hospital ask me to sterilize them after they have seen the beneficial effects of the operation on other patients."

In conclusion, I want to say that, in California we think the law permitting sterilization of the insane and mentally deficient is one of the best things that has been done to prevent the unfit from procreating their kind and adding to the State's burden in caring for the same. It is only to be regretted that we cannot reach out further—that is, sterilize those defectives who do not come into State Institutions. The very life of our nation is its manhood and womanhood, and something must be done that we may beget none but sound offspring, and thus have a nation physically and mentally strong."

Our socially unfit people in Minnesota cost the state, directly and indirectly, about \$30,000 daily. By emulating the State of California most of this cost would soon be eliminated and a more intelligent citizenship be created.

"You talk of your breed of cattle,  
And plan for the higher strain;  
You double the food of the pasture,  
And heap up the measure of grain;  
You draw on the wits of the nation  
To better the barn and the pen;  
But what are you doing, my brothers,  
To better the breed of men?"

## CORRESPONDENCE

### A MINNESOTA HOST OF THE DIPHYLLOBOTRIUM LATUM

TO THE EDITOR:—

For the past eight years I have been studying *Diphyllobothrium latum* in this state. It has been established that there is at least one endemic region in this state in and around Ely. This summer I succeeded in proving that larvæ which I first found in certain fish in these lakes in 1925 were the larvæ of *Diphyllobothrium latum*. It is evident, therefore, that the life history of this worm is being carried on in Minnesota. This had been thoroughly demonstrated by Dr. Nickerson with the assistance of Dr. Parker, of Ely, but no one before this summer had identified with certainty these larvæ in any waters of the United States. The importance of this is apparent, for it is evident that if the condition is allowed to exist it will not be long before more of our lakes are infested.

I am writing to you that you may call attention of the medical profession in this state and that they may be urged to co-operate with any

authorities in the state who may aid in eradicating the infestation. I shall recommend that the disease be made a reportable one, that a survey of the lakes be made to determine the degree of infestation, that persons harboring the tapeworm be required to take treatment, and that they verify the treatment with negative stools, that sewerage be not emptied into the lakes and streams of Minnesota, and that an intensive campaign in Ely be undertaken with a view of teaching people to cook fish well before eating it and to avoid cold smoked perch, pickerel, pike, and trout or salted fish of these species.

The writer wishes here to thank Dr. John Thompson and Dr. O. W. Parker, of Ely, whose splendid co-operation has made this work possible.

I should appreciate your publishing this note in THE JOURNAL-LANCET.

Faternally yours,

T. B. MAGATH, M.D.

Rochester, Minn., Sept. 20, 1927.

### THE EXIT OF THE GOITRE

I've had my head cut loose in front,  
Some surgeon pulled a clever stunt,  
First, stretching me upon a table  
They tied and strapped 'til I was stable.

With one mad leap the surgeon, he  
Climbed on my chest, and with one knee  
Pressed down upon my Adam's apple,  
I could feel him wrench and grapple.

Then, waving high his dripping knife,  
He yelled; "The thing we do to save this life,  
Is cut a little here and there,  
She's too much thyroid, some to spare."

He snatched my wind-pipe with a yank,  
Turned my gullet over—Spank!  
And ever and anon he'd shout:  
"We've got to get this goitre out!"

It came. And, working on apace,  
He sewed me up with a spare shoe-lace.  
Then as the day was getting late,  
They hauled me out like a hunk of freight.

They grabbed me by my heels and head  
And tossed me over on my bed.  
I heard them say: "She'll be all right."  
But, oh! the horrors of that night.

My goitre's gone. And every day  
I'm getting better in every way.  
With one long-drawn, heart-tearing sigh,  
I've bid the thing a last good-bye.

—(MRS.) E. G. JOHNSON,  
Litchfield, Minn.

# THE JOURNAL-LANCET

Represents the Medical Profession of  
Minnesota, North Dakota, South Dakota and Montana  
The Official Journal of the  
North Dakota and South Dakota State Medical Associations  
The Hennepin County Medical Society  
The Soo Railway Surgical Association  
and The Sioux Valley Medical Association

W. A. JONES, M.D., *Editor*

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OCTOBER 1, 1927

## "RAW FOOD DIET"

This article, which was written for the *International Medical Digest*, was abstracted from the *Münchener medizinische Wochenschrift* (June 24, 1927), in which are described the tests made by the author, Hans Malten, to "prove that a diet of raw food is easily tolerated and is comprehensive enough to include all the necessary food elements. The dietetic value is due to the fact that such food is poor in purine, common salt, and water, but rich in vitamins and, because of the change from ordinary diet, acts as a stimulant to the digestive apparatus and to metabolism. Thus it is suitable for gout, renal affections, and hypertonia, especially in the latter condition where the patient must adapt himself to changed living conditions."

Here, again, is suggested the changeability of the physicians, dietists, and the human race, the tendency of the human race to eat something, sometimes, that disagrees with them. Perhaps a few, a very few, selected cases, would respond to such a diet as that suggested above. The great difficulty lies in the fact that the public, seeing these things in print, are very apt to adopt them without due consideration and thus are exposing themselves to undernutrition because they are not at all suitable patients for such experiments. It is said by the newspaper

travelers that in Los Angeles there are more different kinds of healers, dietists, and other food faddists than in any other part of the country; that the city is filled with all kinds of "healers," most of them unknown or self-originated. This is probably due to the fact of the cosmopolitan population found in Los Angeles. It is no strange thing now to hear of almost any place where these new cults are springing up all over the country. Some very well-known physicians in California are surrounding themselves with very desirable patients, mostly from the East, whom they feed on fruits and vegetables. Three kinds of fruits and three kinds of vegetables three times a day would make a real live man lose his mind! To think of having to subsist on that ration for a long time would prove that he has either very strong will power or none at all.

These extremes are very unfortunate because, as a rule, they strike the neuropathic cases—those that are led around by the thinnest ideas that are promulgated, those who are willing to adapt themselves to almost any kind of an environment simply to get a little change of scene in their stomachs. This state of affairs is getting almost beyond belief, and it is now suggested by the chiropractic organizations that they build a hospital for the insane in Minnesota, to cost something like \$500,000, of which they expect and hope to get \$250,000 from the Legislature, presumably on the theory that most people who are crazy have a deviation in their spinal bones that requires readjustment. We say emphatically that they do need readjustment, but not that kind! Can you imagine a case of acute infectious meningitis, acute cysts, or edema of the arachnoid membrane, chronic progressive glioma of the brain, basal tumors, disease of the hypophysis, and arterial disease of the basilar and carotid and other arteries in the region of the interpeduncular space treated by adjustments of so-called "dislocated" vertebræ? Yet it is not so very different from the attempt to readjust our foodstuffs.

It seems quite evident that we, as physicians, calling ourselves regulars, will have to readjust ourselves to the people. They hardly expect to be treated with frankness and honesty because they want something that is either very absorbing, very indefinite, or very intricate, and which contains a new idea. Of course, we know that medicine changes from decade to decade, that is, we are supposed to learn from one decade to another something that is of advantage to the sick, but the majority of sick people think they know best how to treat themselves or what to



do. The result is that the number of neuropsychiatric cases is developing at tremendous speed, which is partly due to the past and present financial disruptions and also to the inadequacy with which the people are informed, to the intermeddling of ignorant people, and to the speed at which the younger class is living—the way in which they are not brought up, their lack of knowledge of elemental and rudimentary things; and incidentally due to the advance in freak methods of treatment, among which are the raw foodstuffs or the limited amount of food for people who should not come under a dietary classification so rigidly imposed by physicians and hospitals. One does not like to eat a lot of raw vegetables unless they are clean and free from unwholesome substances; neither does one like to contemplate the lodgment of intestinal parasites in the body, which are conveyed there by raw foods, for it may be assumed that not all people are going to be careful in the preparation and presentation of foodstuffs.

#### “ACCIDENTAL SYPHILITIC INFECTIONS IN PHYSICIANS”

This question should be considered from time to time on account of the possibility of infection. It is, fortunately, a rather rare instance that a physician becomes infected with lues in the regular performance of his duties. We recall one, perhaps two, such infections which we accepted with some qualifications. In a recent article in the *American Journal of Syphilis*, by Oscar Berghausen, he studies accidental syphilitic infections occurring in twenty-two patients, eight of whom (37 per cent) were physicians. In nine of fourteen laymen the seat of the initial lesion was the lip, the upper and lower lips being about equally infected. Of the remaining five the finger was infected in one, the inside of the mouth in three, and the nose in one. Among the causes or the methods of infection there was, first, infection on the lip acquired through contamination by toothbrush or drinking vessel or otherwise; in two others the infection occurred after operative precedures—at the seat of a tonsillectomy wound in one and on the thumb in another following the manicuring of the nails by a syphilitic manicurist. In seven (87 per cent) of the physicians the finger was primarily infected, the forearm in the other. In each the infection was acquired through a gynecological or obstetric examination or a slight injury during an operation. In one instance a physician injured his right middle-finger by lowering the

window on a train. Since he made gynecological examinations the infection was in all probability acquired shortly after the injury. In one case the forearm was infected just above the cuffline of a rubber glove worn at the time of an obstetrical examination; fortunately treatment was begun at once, which saved him from any outward manifestations of lues.

Considering the above reports, it seems necessary that the health authorities should be persistent in their campaign of instructing the general public as to the use of sanitary drinking vessels in public places. Who would do such a thing as that now? It seems to us that the country ought to be pretty well informed on these subjects. Then, too, it is necessary, apparently, to exercise a more careful supervision over barber-shops and manicure parlors. It would also seem almost necessary to urge physicians to look into the condition of their patients before they operate on them, either in the throat or nose or anywhere else that an infection may exist. One ventures to suggest that not many physicians who operate for throat and nose conditions think much of the possibility of infection from these areas, yet it is undoubtedly much more common than we think.

The public have an idea that venereal disease is acquired through drinking-cups, the use of dishes in hotels, and the toilet seats, but it is almost improbable that the two latter can transmit either form of venereal infection, although it seems to be a favorite topic of conversation with the layman.

#### THE AMERICAN HOSPITAL ASSOCIATION MEETING IN MINNEAPOLIS

This great Association meeting, which takes place in Minneapolis at the New Auditorium on October 10 to 14, will probably be one of the most interesting meetings we have this year; and it will give the men of the cities of all sizes an opportunity to get in touch with the American Hospital Association's work. We think its importance and its influence have not been sufficiently emphasized. Although the *American Hospital Association Journal* is taken quite widely it should circulate more extensively than it does. About five thousand delegates are expected here during this session. Whether that number is realized or not is unimportant, for there will be an attendance of very influential hospital men.

The session begins on Monday, October 10, and lasts four days. The leading representatives

of the eastern hospitals and eastern cities will be present. This, of course, is entirely separate from the men who come from the West, the Middle-West, and the South, all of whom are interested in hospital work. It will also bring a large number of Canadians who will participate not only in the papers but in the discussions. THE JOURNAL-LANCET looks upon this meeting as an opportunity for one to increase his knowledge of hospitals and hospital operation.

The National Headquarters in Washington have given out the following list of men who will be here to represent their various districts:

Dr. S. S. Goldwater, of Mount Sinai Hospital; Dr. William Darrach, of Columbia University; Dr. Walter O. Klotz, of the Cornell Clinic; Dr. Walter C. Conley, of the Metropolitan Hospital; Dr. Michael M. Davis, of the Associated Out-patient Clinic; Dr. John F. Bresnahan, of St. Mark's Hospital; E. H. L. Corwin, of the Hospital Information Bureau; and Mary Ayres Burgess.

Thomas F. Dawkins, of the United Hospital at Portchester, N. Y., will be regional chairman for the special committee from the New York area. Others who will present reports are Dr. C. W. Munger, T. B. Kidner, Oliver H. Bartine, Dr. Ernest P. Boas, Dr. A. J. Davis, Dr. C. C. Burlingame, and Dr. J. J. Golub. Governor Theodore Christianson and Mayor Geo. E. Leach are scheduled to welcome the delegates at the opening session.

### THE CENTRAL NEUROPSYCHIATRIC ASSOCIATION

This large organization will meet in Minneapolis on October 7 and 8, at Millard Hall, University of Minnesota. The Association has grown very materially in membership and it embraces a very large territory—everything west of the Mississippi River, so it includes the northern country, the coast country on the west, and the southwestern states, and, of course, takes in a number of large cities. It has many members from Chicago and other large central eastern cities.

Last year the meeting was held in Cincinnati and was well attended, and proved to be a very enthusiastic type of meeting. This year the Minnesota Neurological Society is responsible for the reception and entertainment of this Association. An all-day meeting is to be held in Minneapolis, divided into clinics and papers by Minnesota men. The afternoon will be devoted almost exclusively to papers or some form of

entertainment, and an evening meeting will be held at the Minnesota Club, in St. Paul, preceded by a dinner which anyone of neurological taint may attend for the sum of \$5.00 including all the et ceteras. It is to be hoped that the St. Paul men who are responsible for this dinner will make it a snappy one, not too cut and dried, and not too dressed up, for after the dinner the members of the Association are to be entertained by two or three men who will present papers, all of which will be very interesting.

An invitation is extended to visiting men in the neurological field as was done in Cincinnati.

Following the morning program on October eighth, the rest of the day is to be devoted to sightseeing, ball games, or anything else that the members would like. At all events, the Minnesota Neurological Society, which is composed of some forty-five members, will be only too glad to entertain this Association and show what they can do up in the far North.

### INITIATING THE FRESHMEN AT THE UNIVERSITY OF MINNESOTA

Last week a group of from 50 to 75 green-capped Freshmen was being escorted around on the Campus by one having the dignity of a Sophomore and minus the green cap. The object of these strolling parties is to have the Freshmen properly introduced to the buildings on the Campus. As the group passed the State Board of Health-Psychology Building the commanding officer announced:

"In one end of this building is the Department of Psychology. In the other is the Pasteur Institute of the State Board of Health Division of Venereal Diseases."

### MISCELLANY

#### POLIOMYELITIS IN MINNESOTA IN 1927

Up to July 1 there had been 12 cases of poliomyelitis reported during 1927. Two of these cases date back to 1926 and one was a 1917 case. Since July 1, altogether there have been 41 cases reported, 2 having had first symptoms in June, 11 in July, 16 in August and 12 in September. These cases have been very much scattered. By counties, by order of occurrence of first case, these cases have been reported as follows: Koochiching 3, Brown 1, Ramsey 3, Hennepin 4, Wright 4, Pine 1, Sherburne 1, Nicollet 2, Olmsted 2, Steele 1, St. Louis 2, Grant 5, Polk 1, Traverse 3, Cass 1, Otter Tail 3, Chisago 1, Lake of the Woods 1, McLeod 1, Wabasha 1.

According to the consideration of Dr. Stanley T. Osborn, of the Connecticut State Department of Health, there has been no outbreak. We must con-



sider, however, that in two instances fairly definite small outbreaks have occurred. The first concerns the Koochiching County 3 cases. These developed in a boys' summer camp. The boys for the most part came from wealthy Evanston, Illinois, families. The first case appeared seven days after the boy left home. On leaving home this boy was separated from his brother who was two years older and did not see him until after the brother was taken sick, about ten days after reaching camp. It is interesting to note here that both of these boys had primary transient illnesses nine or ten days before definite poliomyelitis symptoms are recorded. The boy who first developed poliomyelitis, had nausea and vomiting twelve days before recorded first symptoms, while in Evanston. This illness was very transient and nothing was thought of it. The brother had symptoms of sore throat and headache the day after reaching camp. As this followed so closely upon arrival at camp and going in swimming, nothing was thought of it. The third case in this outbreak occurred 14 days after onset of the second case in a boy who had not been in contact with the second case for a period of about ten days. One case had paralysis of the muscles of deglutition and one paralysis of facial muscles. All three recovered.

A definite outbreak also occurred involving three sanitary districts, Minneapolis C., Hennepin Co., Buffalo V., and Rockford Twp., Wright Co. The first case in this outbreak came by automobile from Riverside, Cal. This child, with her parents, visited a family of cousins in Minneapolis, and, while temporarily residing in Rockford Twp., exposed her cousins from Buffalo V. and two other children in Rockford Twp. All six of these showed paralysis of the muscles of deglutition or of speech, and two had in addition paralysis of facial muscles. Altogether there were six cases with two deaths.

#### DR. ALBERT P. ROUNSEVELL—AN APPRECIATION

The death of Dr. A. P. Rounsevell at Miami, Florida, marks the passing of another of North Dakota's pioneer physicians. He graduated from the Philadelphia College of Medicine in 1871, and at the time of his death had completed 56 years of practice, a length of service attained by few.

He came to North Dakota in 1882 and settled at Larimore, where he remained until 1910, when he removed to Miami, Florida, at which place he afterwards made his home.

When nineteen years of age he enlisted in the Union Army, Company F, 185 New York Volunteer Infantry, and was in the thick of the struggle until peace was declared. He participated in the Grand Review at Washington, D. C., on May 31, 1885. While in civil life he always took an active part in G. A. R. affairs. He was Post State Commander of the North Dakota G. A. R. and did much for the organization. He also held positions of honor and trust in the Masonic bodies. In the midst of an arduous practice he found time to devote to a solution of many of the social and economic problems that confront a new country. He held the position of County Coroner for Grand Forks County for twenty years. His good judgment in handling the cases that came officially before him saved the

county many legal entanglements and much expense as well.

Dr. Rounsevell was much respected and loved by those among whom he labored. He was kindly and sympathetic and carried with him a fund of good cheer, which he dispensed as freely as his other therapeutic measures; and many a remote settler's home was made brighter by his presence. The old pioneers in the prairie homes—and there are a few still left with us—speak in the highest and tenderest terms of the services he rendered in those early days when doctors were few and far between. When a winding prairie trail was thought the acme of road construction and a buckboard with a pair of bronchos was looked upon as the last word in speedy and comfortable travel, people were not so exacting as in these days of haste and hurry. Gratitude was also more in evidence and in many cases was the only coin with which service could be paid.

When the North Dakota Medical Association was organized, in 1887, Dr. Rounsevell was one of the charter members. He was elected treasurer in 1888 and president in 1892. He was held in high esteem by his fellows. Clean, honorable, upright, he left a record worthy of the profession that he honored.

J. GRASSICK, M.D.

#### NEWS ITEMS

Dr. J. J. Ahlfs has moved from Bismarck, N. D., to Conde, S. D.

Dr. H. E. Levin, of Browning, Mont., has located at Azov, Minn.

Philip F. Eckman, of Duluth, was married last month to Hilda V. Linner, of the same city.

Dr. Richard B. Hullseik and Miss Stella E. Joerns, of St. Paul, were married last month.

By the way, have you turned in your license to practice medicine to the clerk of your county court for registration?

Dr. W. A. Liebeler, of Grand Forks, N. D., and Miss Frances Pierce, also of Grand Forks, were married last month.

Dr. G. F. Walter, who has practiced on the Range for a number of years, lately at Marble, has moved to Minneapolis.

Dr. A. H. Parks and wife and daughter have returned from a trip through Europe and a cruise of the Mediterranean.

Dr. Nellie O. Barsness, of St. Paul, has returned from a four-months trip to the clinics of Europe, mainly in Vienna.

Dr. Fred E. Myers, of Eveleth, has been appointed school physician of that city at \$200 a month for half-time service.

Dr. O. B. Bolibaugh, of the Medical Corps of the United States Army has been assigned to duty in the Mayo Foundation.

Dr. Frederick Brown, after practicing in McClusky, N. D., for twenty-two years, has sold his practice to Dr. C. O. Rollic.

The Minnesota Association for Medical Freedom announces its intention to test the constitutionality of the Basic Sciences act.

It was Dr. David E. Nelson (not Dr. C. E. Nelson), of Minneapolis, as announced in our last issue, who succeeded Dr. C. W. Paulson, at North Branch.

The several counties of Southeastern Minnesota which are considering a joint tuberculosis sanatorium seem to come nearer to uniting upon a plan at every meeting held.

Contracts for the erection of an addition to the North Dakota Tuberculosis Sanatorium at San Haven, N. D., have been let. They call for an expenditure of over \$100,000.

Dr. L. E. Nolan, a recent graduate of the Medical School of the U. of M., whose internship was taken at St. Luke's Hospital of Duluth, has located at Vernon Center.

The building in Minneapolis occupied by the Minneapolis College of Physicians and Surgeons for a number of years has been torn down to make room for other structures.

A group of twenty-five members of the Surgical Section of the Royal Society of Medicine of England, who are on a tour of the United States and Canada, visited the Mayo Clinic last month.

The Moore Hospital of Moore, Mont., which has been closed for three years, has been opened at Harlowtown, Mont., because of the encouragement of the business by business men of the latter place.

Dr. L. H. Winer has been appointed assistant physician in the General Hospital of Minneapolis, and Dr. Walter H. Fink becomes assistant in the eye, ear, nose, and throat service of the Hospital.

Dr. George A. C. Cutts, of Litchfield, died on September 17, at the age of 51. Dr. Cutts was a graduate of the Medical School of the U. of M., class of '00. He formerly practiced at Grove City.

Dr. Ruth Boynton, Director of the Division of Child Hygiene of the Minnesota State Board

of Health, has resigned to accept a position on the faculty of the University of Chicago. Dr. E. C. Hartley, of St. Paul, succeeds Dr. Boynton.

The Sioux Falls (S. D.) District Medical Society held its first fall meeting last month. The speaker of the evening was Dr. B. H. Hager, of the Mayo Clinic. The new Physicians' Exchange and Nurses' Registry was formally opened.

Dr. A. B. Hall, of St. Paul, was married last month to Miss Carolyn Nelson, also of St. Paul. Dr. Hall is a recent graduate of the School of Medicine of the U. of M. Dr. Hall has an appointment on the staff of the Columbia School of Medicine.

Dr. John J. Platt, of St. Paul, died on September 12, at the age of 52. Dr. Platt graduated from the Medical School of the U. of M., class of '95, and he practiced in St. Paul until his death. He was a major in the Army Medical Corps in the World War.

Dr. J. F. Tobin has moved from Mitchell, S. D., to Aberdeen, S. D. Dr. Tobin was associated for six years in Mitchell with Drs. Delaney and Malloy and was a member of the Staff of St. Joseph's Hospital. His specialty is kidney and bladder diseases.

The new addition to St. Joseph's Hospital, of Mankato, which was formally opened last month, gives the hospital a capacity of 120 beds besides the home for the aged and for the nuns and nurses. The second floor of the new addition is especially prepared for maternity cases.

The following officers were elected last month at the annual meeting of the Northern Minnesota Medical Association: President, Dr. F. J. Hirschboeck, Duluth; vice-president, Dr. A. J. Lewis, Henning; secretary-treasurer, Dr. M. O. Oppegaard. The next meeting will be held at Fergus Falls.

Dr. Abraham F. Strickler, of Sleepy Eye, died on Sept. 12, at the age of 50. Dr. Strickler was a graduate of the Medical School of the University of Minnesota, class of '98, and had practiced in Sleepy Eye since his graduation. He served in the World War and was prominent in civic matters at home.

The Extension Division of the University of Minnesota has begun a series of lectures on medical topics at Moorhead and Fergus Falls for eight weeks, one lecture being given every Monday. Dr. A. W. Adson, of the Mayo Clinic,



and Dr. W. C. Fansler, of Minneapolis, were the speakers last week.

The ninth annual meeting of the Association of Resident and Ex-Resident Physicians of the Mayo Clinic was held at Rochester on September 27-29. A program of over twenty papers with discussions and visits to the clinics of the Mayo hospitals made the meeting a comprehensive, interesting, and informative one.

A health clinic was conducted at the South Dakota State Fair last month. Forty babies were examined by Miss Florence Walker, Director of a Division of Child Hygiene, of the State Board of Health, to determine the healthiest child among them, and other clinics and examinations were conducted for boys and girls.

The annual meeting of the Post Graduate Medical Association meets in Kansas City on October 14-21. Many distinguished men will be present, and the meeting promises to be one of the best held since the Association was organized. Special rates will be made by the railroad, and sleepers will run from the Twin Cities to Kansas City.

A meeting of the Central Association of Private Sanitariums will be held in Minneapolis on October sixth, a one-day session. Dr. D. A. Johnston, of the Cincinnati Sanitarium, is the secretary of this newly organized association, and it is the intention of the Association to welcome anyone who is interested in the work of private sanitariums.

The Executive Officer of the Minnesota State Board of Health, Dr. A. J. Chesley, has been obliged to make important changes in the Divisions of Venereal Diseases, Child Hygiene, and Sanitation because of reduced appropriations. Circulars of information concerning these changes may be obtained from the State Board of Health.

At the annual meeting of the Minnesota Academy of Medicine, the following officers were elected: President, Dr. John E. Haynes, Minneapolis; vice-president, Dr. C. N. McCloud, St. Paul; secretary-treasurer, Dr. Carl B. Drake, St. Paul. Dr. F. J. Hischboeck, of Duluth, and Dr. H. F. Helmholtz, of the Mayo Clinic, Rochester, were elected associate members.

#### Huron (S. D.) Medical Society

The first meeting of the 1927-28 series was held in the dining-room of the Marvin Hughitt hotel, Thursday, September 8, at 6:30 P. M.

A paper was presented by Dr. E. B. Taylor, of

Huron, and important business matters were discussed.

The program for the coming year is outlined below:

#### October 6

Dr. M. E. Cogswell  
Dr. Benj. Thomas  
Dr. H. D. Sewell

#### November 3

Dr. G. W. Lannspach  
Dr. D. A. Gregory

#### December 1

Dr. W. H. Griffith  
Dr. O. R. Wright  
Dr. G. V. Sigler  
Dr. J. C. Hagin  
Dr. R. A. Buchanan  
Dr. H. L. Saylor

#### February 2

Dr. W. H. Saxton  
Dr. J. S. Tschetter

#### March 1

Dr. A. P. Scheib  
Dr. M. C. Sorenson  
Dr. T. J. Wood

#### April 5

Dr. J. F. Paddleford  
Dr. N. B. Gearhart  
Dr. B. H. Sprague

#### May 3

Dr. J. F. McKie  
Dr. J. C. Shirley  
Dr. C. A. Feige

H. L. SAYLOR, M.D., President  
W. H. GRIFFITH, M.D., Secretary

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A good opening is offered a German-speaking dentist in a Minnesota town. Address 399, care of this office.

#### Minnesota Practice for Sale

In a good country town in southern Minnesota. Fine country, thickly settled. Good cash income. Address 390, care of this office.

#### Office Work Wanted in Minneapolis

A young woman, graduate of a Minneapolis High School, with highest of references, wants office work at a moderate salary. Address 395, care of this office.

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Eight-room office suite at 3805 Nicollet Ave. Can be arranged as dwelling and office. Price \$85.00 a month. Drs. Bessessen, 3805 Nicollet Ave., Minneapolis.

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By an Illinois M. D. Internship taken at Ancker Hospital, St. Paul. Age 26; single; holds Minnesota license; available on short notice. Address 403, care of this office.

**General Practice for Sale**

In western Minnesota. Population of town, 1,600. Good roads. Good community. Complete office equipment including x-ray and physiotherapy. Good price will be made. Address 396, care of this office.

**Practice and Equipment for Sale**

In a county-seat town in Central Minnesota. Population, 2,000. Fine farming community, thickly settled. Good cash income from the start in an established practice. Address 402, care of this office.

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Young woman wishes employment in a doctor's office, small hospital, or sanatorium or clinic. Have had training in physiotherapy, x-ray, and light laboratory work. Will start with reasonable salary. Work desired in St. Paul or Minneapolis. Address 401, care of this office.

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## FOOD INJURIES\*

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Food injuries may be described as disturbances of health brought about by faulty or injurious diet. The symptoms resulting from food disturbances are not uniform. The true nature of the injuries produced by food is indefinite and conjectural. The harm which occurs may be due to an excess or a deficiency of any food substance. It may also be due to an incorrect or badly balanced mixture of foods. For example, a baby may be getting whole milk in excessive quantity which eventually will cause an upset of digestive function. This constitutes the condition known as over-feeding. On the other hand, a baby at the breast may be sucking ineffectually and receiving an insufficient amount of food. This is under-feeding. Sometimes an infant receives an excessive carbohydrate diet. It is obvious that such feeding does not constitute a milk injury, but a food injury. It should be made clear that the injury which the baby sustains is brought about by a faulty or injurious diet. This does not mean that the diet consists of spoiled milk or bacteria-laden milk, but that the difficulty is due to the composition or the quality of the food. As a general rule, if the error of the diet is corrected, these injuries will be overcome and will tend to disappear.

As a result of food injury, certain structures or organs of the body are affected. This is illus-

trated in scurvy. In this disease there are hemorrhages under and into the gums, under the skin and periosteum. The baby who receives an excess of starchy food for a long period of time is likely to develop malnutrition. In some instances a dropsical condition may ensue; and in the more extreme states ulceration of the cornea, or xerophthalmia, may occur. The point that I wish to convey is that if the food is of improper kind or if the composition is quantitatively or qualitatively incorrect some of the food substances which are essential for life, growth, and development are absent. If such substances remain absent for a considerable time certain structures and organs of the body show abnormal changes as the result of this deficiency.

It may be said, also, that with a diet which does not provide for growth and development, there is lowering of the resistance of the individual against infection. For example, a baby who is fed on a mixture excessive in starch or on skimmed milk, suffers a reduction of natural immunity and is susceptible to infections. An infant thus fed may develop furuncles, bronchitis, bronchopneumonia, or pyelitis.

Several years ago it was thought that many breast-fed babies were being over-fed, and doctors advised the mothers to do everything to prevent over-feeding. With the modern regime of four-hour intervals between feedings, it was soon found that there was not so much danger

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of over-feeding, but more likelihood of under-feeding, the infant. One cannot deny that occasionally a baby is injured by being over-fed, whether it be with breast milk, or cow's milk mixtures, or improper mixtures. On the other hand, more newborn and young babies suffer from under-feeding than over-feeding. The young baby needs considerable amount of milk. The quantity can be readily calculated by estimating the caloric need of the baby and the number of calories contained in the milk mixture. The mixtures which have been heretofore employed in feeding newborn babies, such as one-third milk to two-thirds water, have been found to contain insufficient food for the baby's needs. There is also an individual difference in the energy requirements of infants. Some vigorous, healthy babies need large quantities of milk to provide for growth and development. Very frequently the baby is restless and very unhappy because he is hungry. This can be easily corrected by supplying more food.

The development of our knowledge concerning food injuries is a very interesting chapter in the history and growth of our art. Many speculations were indulged in to explain the malnutrition and the alimentary disturbances of infants. In the older days, when medical men were groping in the dark, they thought that these conditions were due to teething, to intestinal parasites, or to inherited weaknesses of constitution. When medicine progressed to a more scientific era, a school of physicians thought these conditions of malnutrition and diarrhea were due to inherent or acquired diseases of the cells which were concerned in digestive functions.

This obviously occurred during the era of cellular pathology. The schools of Rokitsansky and Virchow thought that all abnormalities could be explained on the basis of cellular pathology, but more careful study and the progress of time showed that the cellular changes in the alimentary tract were insignificant compared with the virulence and the fatality of this group of infantile disorders. With the advent of bacteriology it was hoped that this new science would explain the mysteries of malnutrition and infantile disorders.

It is true that infections of the alimentary tract may occur, and the dysentery groups of diseases which affect young infants may explain, in small part, the digestive and nutritional disturbances and diarrheas in young childhood. But, to the food itself, its quantity, quality, and composition, must be ascribed a large and important part in

the cause of these alimentary disorders.

The investigators of the disease called beriberi threw some light on our knowledge concerning food injuries. Beriberi causes lesions of nerve fibers and nerve cells and paralysis. The first scientific investigators were aware of the fact that the disease occurred particularly in those individuals who lived largely on rice. They believed that there was some germ or organism contained in this food which caused the condition. They examined every portion of the kernel bacteriologically and obtained negative results.

Later on another group of investigators conceived the idea that the rice fermented either inside or outside of the body, producing oxalic acid, and that this substance was absorbed, producing an intoxication. This view, however, proved untenable and could not be supported. Still later a group of scientists found experimentally that if birds were fed polished rice for a period of time they suffered from neuritis or paralysis similar to that which occurred in beriberi. If these same birds were given an extract made from the shells of the rice they recovered in a brief time. This, then, was probably the explanation of what occurred in man. The long-continued use of a single food deficient in certain substances produced a deficiency disease caused by the lack of accessory food substances, or vitamins.

In infant feeding, particularly in bottle feeding, various opinions have been held during the past forty or fifty years concerning the ultimate food substances. The older teachers thought that the casein of milk was the root of all evil. This was the prevalent idea in Central Europe, in the British Isles, and in America for many years. At a later period another group thought that an excess of fat in the milk was the cause of nutritional and diarrheal disorders. Still later another group thought that sugars or the carbohydrates were the principal causes of the mischief. You will possibly remember that Czerny originated the idea of food injury. He thought that a baby might be damaged as a result of improper composition of the milk, excessive ingestion of starch, or ingestion of an insufficient amount of calcium.

Let us digress for a moment and consider starch injuries. This condition occurs in an infant who has been ill with some digestive disturbance, and who has temporarily been given barley water, or rice water, or some starch mixture. The baby improves temporarily on this food, and the mother, of her own accord, con-



tinues to feed the baby in this manner. She keeps on with this carbohydrate feeding until eventually the baby falls ill. The infant may lose weight and the temperature may fall below normal. The skin sometimes loses its elasticity and becomes pale and gray. At other times, water is retained in the body, and the baby becomes dropsical.

I have already referred to the fact that such a baby's resistance becomes lowered, that infections develop, and that keratomalacia may occur. These babies frequently die, though some may be saved. We may ask what measures will save a baby, and the answer is, "Give him a properly balanced diet, one that contains the necessary food substances, before his tissues and organs have been damaged too excessively, and his life may be spared." Why do these babies suffer such marked nutritional disturbances? Why this condition of minus nutrition? Did the starch poison them?

The baby who suffers from starch injury was not damaged because he received only starch, but because he failed to receive certain substances for growth and development. He also received very little protein. He was receiving no fat. There was no readily combustible sugar. Lastly, and probably most important of all, there were no accessory food-stuffs,—there were no vitamins. Perhaps we might say that it was not so much an error of commission as an error of omission.

By way of emphasis, we may say that it is not always what we give in the way of diet, but sometimes what we fail to give that causes disease, nutritional disturbances, and even death.

At this point we may take up again the subject of milk injury. I have already referred to the fact that Czerny thought that milk injury was due to the fat. You will remember Czerny's first view concerning the excessive fat in milk. You will recall that he explained the food injury by saying that fat is split up in the intestinal canal into fatty acid and glycerin. If the fat is present in large amount, quantities of fatty acid are produced. This substance requires considerable amount of alkali for its neutralization. The combination of fatty acid and alkali produces soap. Czerny stated that a large quantity of alkali was required to neutralize the acid, and consequently the body was robbed of alkali. The patient suffered from alkalipenia, or, to use another expression, the body was demineralized. According to Czerny's views another type of injury occurs. If the

alkali is removed from the body no alkaline substance is left to neutralize the remaining acids of the body. Consequently the acids are in excess, and acidosis results.

Later investigation, however, showed that Czerny's explanation was not entirely satisfactory, and that acidosis did not occur in so simple a manner. On the other hand, the loss of the minerals, possibly due to an excess of fat and to diarrhea, was of serious importance in delaying the upbuilding process of the body. It is an elementary fact in physiology that calcium, potassium, and sodium are necessary components of the tissues and fluids of the body, and without them growth, development, and repair are not possible. It was pointed out, particularly by Finkelstein, that no single element of milk was responsible for the disturbances of alimentation and nutrition, but that they were produced by improper correlation of the various food stuffs. Very often, if sufficient carbohydrate or sugar is given to the baby who is receiving a milk mixture, high in fat, the difficulty from fat indigestion will be less severe or will not occur at all. In other words, it is necessary to keep the food stuffs balanced and so adjusted that one element aids the other. This may be illustrated in the following manner: If a baby be given an excessive amount of sugar, fermentation occurs and diarrhea follows; if, on the other hand, you increase the sugar moderately and increase the protein at the same time, the protein in the milk will check the fermentation of the sugar.

If the lipoid substance is omitted from the food entirely, that is, if no butter fat, cream, yolk of egg, or cod liver oil is given, what will happen? The Japanese physician, Mori, in 1904 conceived the idea of feeding babies on vegetables without fat. He did this for a considerable time. The infants developed ulcers of the cornea. Their normal nutritional processes were restored by the administration of cod liver oil. A similar experiment was carried on by Bloch of Denmark. He gave babies a diet excluding butter, eggs, or any of the lipoids containing the fat soluble vitamin. Some received margarine, an animal fat. All developed corneal ulcers. Very soon he fed the same group on whole milk and vegetables, and they developed no eye symptoms. Why did this latter group remain free from visual disturbances? It seems very simple. The latter diet contained the fat soluble vitamin in the milk and cream.

In older infants and in young adults another group of symptoms may develop if the fats be completely withdrawn from the diet. Osteoma-

lacia develops, due to the absence of the fat soluble vitamin.

Now, we may go a step further and consider the so-called alimentary anemia. This condition is frequently encountered in babies who are fed on an exclusive milk diet for a protracted period. It sometimes occurs in babies who are fed breast milk exclusively. We may cite the example of a baby who is being fed on the breast, is prospering, gaining in weight, and is taking the breast every three or four hours from a strong healthy young mother. The breast feeding is continued eight, nine, or ten months, or even for a year. Soon it is noticed that the baby is growing fat but is becoming more and more pale. Recall the fact that the infant is receiving nothing but breast milk. Eventually the baby falls ill. The physician who is called discovers that the baby is suffering from anemia and he tells the mother that the baby is suffering from an alimentary or a milk anemia. The same condition occurs when a baby is fed exclusively on cow's milk for a long period. Recently much has been written on goat's-milk anemia. Some of these babies fed exclusively on goat's milk become very pale and show evidences of blood cell destruction, and occasionally such a one sickens and dies. It is difficult to explain why such severe anemias should occur on a diet of goat's milk. Perhaps, it depends somewhat on the food which the goats themselves are fed. It is possible that these animals are receiving a food which is insufficient in the accessory substances. Now, the question is, why do these babies become so anemic when fed on an exclusive milk diet.

The various investigators maintained that these milks are deficient in iron. It is said of the premature baby that he comes into the world with a deficiency of stored iron in his body, and the milk which he receives also contains a minimum amount of iron salts. Consequently the iron intake is never sufficient for the purpose of hemoglobin production. We shall see in a moment if this is strictly true. It is said in addition that all new-born babies come into the world with an iron depot, or iron reserve. This is supposed to be stored up principally in the liver. When iron contained in the food stuffs is insufficient, the organism uses the reserve supply from the depots and when they become exhausted, anemia occurs. But it has been shown that when the anemia is in progress or if it develops that these babies may be given iron by mouth or subcutaneously and still the anemia does not improve. Possibly, then, the anemia

is not due to a deficiency of iron. Perhaps some of you are saying at this moment that the baby did not have enough calcium in his milk, or that he became demineralized in some other way, though there is no proof to support this view. The explanation of these anemias is difficult and is unsatisfactory because of the present state of our knowledge. Even those babies kept for too long a time at the mother's breast become anemic.

We will try to determine where the trouble lies. It has been suggested that an infant on an exclusive milk diet is receiving an insufficient quantity of accessory food substances. If such a baby is given a sufficient amount of orange juice and carrot soup in addition to the milk, he tends to recover from the anemia. There is no doubt that these latter substances contain vitamins, though they also contain mineral salts. What proof is there that the mineral salts and not the vitamins cause blood-regeneration?

It is worthy of note that fruit juices and vegetables, carrots and carrot soups, may be given at an early period of life. These serve to supply the food substances which prevent anemia and other nutritional disturbances.

Now, briefly to summarize the last point: breast-fed babies, as well as those fed on other milk, become anemic if the exclusive milk feeding is continued for a long time. This may be due in part to the low iron content of the food, but the anemia also may be due to the absence of vitamins that stimulate iron or hemoglobin production in the body. It should also be mentioned that some babies are difficult to feed and suffer from anorexia, refusing every kind of food except milk. These babies are frequently anemic for the reasons already mentioned.

It is interesting to note that some observers recently have claimed that alimentary anemia bears a close relationship to infantile scurvy. It is true that in the simple anemias, hemorrhages do not occur, though, on the other hand, in most cases of scurvy severe anemia precedes and is associated with the active disease. An important point that suggests their close relationship is that the treatment which causes improvement in alimentary anemia, or milk injury, will also cure infantile scurvy. The treatment consists simply of giving water-soluble vitamin C.

In closing, I may say that I have attempted to consider briefly some of the more important facts concerning the nature and clinical phenomena of food injuries. This should be a very profitable study in the treatment of the nutritional disturbances of infants. In the treatment of



disease, of whatever kind, it is important to know what faults have occurred and how the individuals have been injured. If we can work out the mechanism of the injury we can solve the

mechanism of the treatment. If we know what is bad in the feeding of human beings, in the same sense, it should not be a difficult task to find out what is good for them.

## FUNDUS EXAMINATION IN GENERAL PRACTICE\*

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Ophthalmic practice has no more interesting and fascinating phase than the routine examination of the human fundus for the reason that it affords unending opportunity to view visible pathologic changes in the eye. The variations in the normal picture alone would be sufficient to maintain our interest. Ability to recognize multitudinous normal variations is the basis of good ophthalmoscopy. It must be acquired before one may correctly interpret and put into pathological language that which is abnormal. To do this requires a considerable amount of training and daily practice. The use of an electric model makes the ophthalmoscope a most effective diagnostic instrument, especially in bedside work, and provides valuable diagnostic and prognostic information at little expense of time or trouble. To make a very thorough examination one should study the background of the eye through a partially dilated pupil because it affords a larger field for examination under better conditions of illumination. For this purpose a combined solution of  $\frac{1}{4}\%$  homatropine and 4% cocaine is effective. The use of a mydriatic for examination should always be followed by instillation of a miotic ( $\frac{1}{2}\%$  pilocarpin) to avoid inconvenience to the subject examined and prevent increased intra-ocular tension. Ophthalmoscopy is only one phase of diagnostic work which helps maintain the close alliance ophthalmology has always had with general medicine. The revelations of fundus examination involve constant demands upon the general and special diagnosticians and laboratories, to interpret the etiologic significance of pathology found in the retina and choroid, the optic nerve and the circulatory system of the eye. Likewise, ophthalmologists are daily called upon for diagnostic aid from all other fields of practice. In group practice especially, with ready consultation privilege available, fundus examination plays an important part in the diagnostic study of the obscure case.

Before calling attention to a very few of the common conditions we frequently meet with in ophthalmoscopy and noting briefly their diagnostic significance, one must emphasize the fact that an ophthalmoscopic examination is by no means limited to the retina, the optic nerve, and the condition of the blood vessels in the eye. The pupillary reactions observed, preliminary to examination of the deeper eye structures, are often a source of enlightenment: a very considerable refractive error, evidenced by the lens required to focus properly upon the retina, especially when this discloses the presence of astigmatism or hypermetropia, may have a most intimate relationship with headaches; occasionally, evidences in the cornea such as the remains of non-functioning, new-formed vessels, invisible by ordinary inspection, make possible the diagnosis of inherited lues, perhaps hitherto overlooked and unsuspected. The presence of opacities on the posterior surface of the cornea, associated with so-called "quiet uveitis," not accompanied by marked inflammatory symptoms, often indicates tuberculosis or a chronic toxemia, the cause of which must be sought. Posterior synechia or deposit of iris pigment upon the anterior capsule of the lens without synechia bespeaks previous iritis; without history or evidence of traumatism, this would naturally indicate that at some time in the past there had been severe systemic or focal infection. Again, opacities and degenerative changes in the lens or vitreous frequently indicate premature nutritional or circulatory disease or their toxic forebears, which make it advisable to determine the reason for their presence. As example of this we have diabetic lens opacity. The foregoing are only a few illustrations of changes observed anterior to the fundus itself.

It has been said that the eye may on some occasion show evidence of almost every disease known to medicine. The ophthalmic symptoms and examination may sound the first warning of a serious constitutional condition. How fre-

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quently do we observe, as a concrete example, an albuminuric retinitis or a macular hemorrhage with hypertension, the patient coming to us for acute dimness of vision; or, without serious impairment of vision, one may find deposits or exudates in the retina, or radiating figures in the macula indicative of chronic interstitial nephritis. These may not always indicate nephritis, for they are found rarely in connection with retinal tuberculosis following influenza, and they frequently are seen in syphilis. When found with albuminuric retinitis, they are usually dependent on the vascular changes. A very different prognostic significance attaches to these exudates when found in the toxemia of pregnancy, when they may be extremely abundant but clear up almost entirely with fair restoration of vision, and no serious permanent effect upon the system. Close observation of the retinal changes associated with the various anemias by the physician watching the general condition of the patient often affords evidence of the severity of the disease. In neurological diagnosis examination of the nerve head affords perhaps the most valuable aid. Hughling Jackson early called attention to its import in affections of the brain to which the eyes are so intimately related neurologically, as well as through their vascular systems. The retinal vascular structure is a most valuable guide so far as cerebral disease associated with high blood pressure is concerned. In the study of degenerative diseases of which cerebrospinal lues is an example, often indicated by few other clinical symptoms, changes in the optic disc, especially alterations in its vascularity, serve to confirm what otherwise might be merely suspicious. The presence of papilledema, bespeaking either profound toxemia or increased intracranial pressure with its mechanical sequence in the nerve head, is a most significant finding not difficult to recognize. These are only a few of the pathological evidences to be found in the fundus structures.

Consideration of some of the diagnostic phases of choroidal and retinal exudates, of neuroretinitis and optic atrophy, and one of the most important of fundus studies, of arteriosclerosis and hypertension, may be of value.

In the differentiation between retinal exudates and choroiditis one must ever bear in mind that both are ordinarily an expression of marked toxemia. Retinal exudates occur as so-called cotton-wool or snowbank patches with soft edges, in the neighborhood of blood vessels, often accompanied by small hemorrhagic borders, without any pigment disturbances. They

are round, oval, or kidney-shaped, usually about one-half or less the diameter of the disc, composed of cellular exudates from the blood, usually in the nuclear layer of the retina; or often they are plastic exudates between the nerve fibers bordered by hemorrhages. These have a systemic toxic basis, and are associated with vascular degeneration and venous obstruction or stasis which mechanically produce retinal exudates. With them one finds the vessels usually more or less tortuous, their curves being perpendicular to the plane of the retina. The exudates sometimes coalesce to form larger masses or they may be entirely resolved and leave slight trace of their previous existence, under appropriate treatment of the systemic cause combined with eliminative therapy. Their presence may be of significance as regards prognosis and the need of hospitalization to secure the best results from treatment. A still different type of retinal deposit shows small brilliant hard white dots often in size only about that of the diameter of the retinal vessels, occurring at a later stage of chronic interstitial nephritis. They may at times appear as stellate changes around the macula. These are true degenerative changes, which rarely entirely disappear. Both types are usually a manifestation of advanced vascular pathology, occur in a very small percentage of true acute nephritis (trench nephritis, excepting pregnancy and scarlatinal nephritis), and are not often present in children. The first type of change especially warrants a grave prognosis. It is impossible to ophthalmoscopically differentiate diabetic retinitis with certainty from albuminuric retinitis. The prognosis is better in diabetic retinitis. The changes in both are generally confined to the posterior pole of the eye around the macula and nerve head. One rarely sees marked renal or diabetic changes in the periphery of the fundus. The presence of retinal exudates indicates a break in renal functions, impaired metabolism or advanced vascular changes necessitating active therapeutic measures before balance may be properly re-established. Especially significant are the severe types of toxemia associated with optic neuritis, sometimes with extensive hemorrhages in the vicinity of the optic nerve. All of the above changes are frequently associated with high blood pressure.

Differentiation of the exudative retinal changes from choroiditis during an acute exudative stage of the latter is important but not difficult. In exudative choroiditis the patches are yellow and more diffuse, not accompanied by retinal hemor-



rhages. They may occur anywhere in the fundus often in its periphery, but also are prone to damage the macula. Their distribution is independent of the retinal vessels, often accompanied by pigment changes. When the choroiditis is arrested or passes into the stage of atrophy, the patches are densely white with sharp edges bordered by collections of pigment. Choroidal patches of exudate or atrophy, as previously mentioned, are an expression of toxemia, of chronic toxemia most often. When seen with the ophthalmoscope, they always require searching study to determine their cause, which is practically never renal. Their cause is frequently syphilis or tuberculosis. Any of the focal infections, such as produce iritis, viz., teeth, tonsils, and such infections as prostatitis, salpingitis, pyelonephritis, cholecystitis, etc., may be causes. Another type of choroidal atrophy without pigment borders is found associated with myopia, but this may resemble that seen in syphilis, both the acquired and inherited forms. Not infrequently tuberculosis manifests itself in the form of a choroidoretinal exudate, at the macula or in the vicinity of the main vessels, but not so frequently bilateral as the toxic manifestations previously mentioned. In the acute stage one observes vitreous exudates often neighboring the localized choroiditis.

The ordinary optic neuritis begins with haziness of the margins, usually first noticed on the upper nasal quadrant, shows intensive hyperemia of the nerve head, as a rule, and engorgement of the venous branches, but with contraction of the arteries as a result of swelling. The nerve may have a hemorrhage on the disc itself as a very early sign before there develops exudate completely obscuring the vessels for some distance and concealing the margins of the disc. The degree of swelling of the nerve may be measured by the lens required to focus details of its summit compared with that required for the retina, some distance from the nerve. One condition frequently confuses us in diagnosis, the so-called "spurious neuritis." It is an appearance of the nerve head, associated with high hyperopic astigmatism with blurred disc margins which closely resembles optic neuritis. It requires prolonged observation at times to make certain the differential diagnosis. Another condition sometimes confused with choked disc in which recently I saw a mistaken diagnosis made, is so-called thrombosis of the central retinal vein. With extensive extravasation of blood into the surrounding tissue, occasionally seen with choked disc, the fundus picture resembles thrombosis. Cen-

tral venous thrombosis occurs in patients who are subjects of arteriosclerosis, is sudden in onset, and occurs only in one eye. One may, however, actually have thrombosis of the vein as a result of extreme nerve swelling.

In neuroretinitis it is sometimes possible to make a differential diagnosis between toxemia and neuritis caused by increased intracranial pressure, but its etiology may be extremely difficult to determine on occasions even after thorough examinations and careful laboratory tests have been made. In one instance observed, a brain tumor was masked by renal symptoms of sufficient severity to account for the optic neuritis found present. Also, I have seen a diagnosis of brain tumor made when the neuroretinitis was caused by syphilis, the blood Wassermann being reported negative. It is said that optic neuritis occurs in 25 to 30 per cent of tuberculous meningitis especially when this is basal, though it is rarely extreme. It frequently is not present in either epidemic or acute septic meningitis. It is present in over 80 per cent of brain tumors at some stage. It practically never occurs with intracranial hemorrhage or cerebral softening, contrary to usual opinion. I have observed recurrence of optic neuritis with brain tumor after its subsidence following palliative decompression. In tumor, the amount of exudation on the disc, of elevation of the nerve head, the degree of engorgement, and tortuosity of the veins, with narrowing of the arteries, is frequently out of all proportion to the size of the tumor or the period of its existence. Homolaterality has little diagnostic significance in tumor localization, but the consensus of opinion is that it is of value in localizing brain abscess. We do know that tumors of the cerebellopontine angle and of the cerebellum are more frequently accompanied by choked discs than those of the frontal lobe and of the hypophysis. In fact we ordinarily find atrophy with hypophysis tumor for the reason that pressure is directly upon the nerve and subarachnoid spaces, and communication is cut off between the cerebral meninges and the optic nerve sheath. Optic neuritis is often the earliest positive sign of brain tumor and in the presence of persistent headaches or other brain symptoms should be looked for in every case. It is not usually difficult to diagnose an optic neuritis, papilloedema or choked disc, all of which are gradations of the same thing. "Hyperemia of the disc" is a diagnostic pitfall not easy to avoid.

The diagnosis of optic atrophy involves, practically, the differentiation of types; of itself it is

not difficult to recognize. We usually speak of four forms of optic atrophy. In primary, or simple atrophy of the optic nerve proper, the nerve has a bluish or grayish white color, the lamina cribrosa is visible, the edges are sharply distinct, the vessels are of normal size, or only slightly diminished. In long standing atrophy the retina is usually unchanged. This is the type most frequently seen in tabes or cerebral spinal syphilis; but one should not jump at conclusions. It cannot be differentiated from a similar picture seen in the optic nerve after fracture of the optic foramen, which is said to occur in 60 per cent of basal skull fractures involving the orbit. About the same appearance of the nerve may appear after compression of the artery by hemorrhage or orbital tumor. It occurs from penetrating wounds of the orbit injuring the vascular supply of the nerve, and in hypophysis disease, from internal hydrocephalus and advanced disseminated sclerosis. In this last mentioned condition, however, the ophthalmic findings show much less than the visual impairment would indicate.

["Secondary atrophy" should really include both of the next two forms but arising from different causes.] The second type is that known as post-neuritic atrophy, following optic neuritis and choked disc. Here the color is dead white, one might say a china white, from glial sclerosis and occlusions of smaller vessels, the main vessels diminished in size from compression and often accompanied by white lines of organized connective tissue with thickening of their walls. There may be exudate around the nerve which has become organized if excessive exudate in the nerve-head was present, following its resorption after subsidence of the neuritis. The nerve looks flat, and the margins are less distinctly visible than in primary atrophy.

The third type is the consecutive atrophy which follows retinal or choroidal degenerative disease, retinitis pigmentosa, disseminated chorioiditis, or embolism of the central retinal artery. Here the disc appears waxy or a dirty parchment color. The atrophy has followed death of the retinal elements often without any change in the circulation of the nerve-head. The margins are distinct, often surrounded by a halo of atrophic choroid, or absorbed retinal pigment, or upheaval of pigment. The vessels are always shrunken, both the arteries and the veins. It should be borne in mind that this form of consecutive secondary atrophy may follow or be caused by arteriosclerosis with obliterating endarteritis and atrophy of the retinal elements.

The fourth kind is that associated with glaucoma simplex, which is not primarily a nerve disease. True glaucoma simplex is always accompanied by optic nerve atrophy, although an acute transitory glaucoma attack may not be. The ophthalmoscopic picture shows the typical glaucomatous cup with a shelf-edge margin, the excavation of the nerve-head following steadily maintained increase in intra-ocular pressure, which, contrary to popular belief, is quite independent of intravascular blood pressure.

A fifth type, namely, hereditary optic atrophy, seen principally in males and beginning in the second and third decades, is extremely rare, resembling primary atrophy, requires only passing mention.

In optic atrophy it is important to remember that no real diagnostic study or record of progress can be made without records of the perimetric fields of vision. Optic nerve atrophy is always accompanied by contracted visual fields although the latter may occur without visible ophthalmoscopic change.

The importance of recognition of evidences of arteriosclerosis and hypertension cannot be overestimated although the majority of internists fail to avail themselves with sufficient frequency of this valuable source of information. Also observation leads one to believe that ophthalmologists, in routine examination of the fundi, do not study the arteries closely enough. The picture of hypertension may be distinct from that of arteriosclerosis; often the two are combined. When hypertension is present without marked change in the retinal vessels, we are dealing with hypertension which is either functional or the subjects are young. In such cases the prognosis for the arteries is good. We may have arteriosclerosis with no hypertension—we most often see this in senile subjects with low blood pressure. The majority of these patients get along very well. When the two are combined and if toxic retinitis be super-added to the picture of either, the prognosis is decidedly questionable. The changes in vessels found in the fundi may be too complex to permit exact analysis of their origin, but with aid of the internist and with accumulated experience, one may learn to associate certain findings with definite clinical conditions. Essentially, the study of etiological factors and a knowledge of underlying pathology of the conditions found is necessary in interpretation.

The first published case showing ophthalmological evidence of hypertension was by Marcus Gunn, in 1892, before the use of instruments for recording blood pressure. Gunn's description



was as follows: "The central light streak is very distinct and sharp, producing a metallic appearance like bright copper wire. This condition has been observed in chronic albuminuria and in cases where no albumin is found, and where high tension suggested the probability of changes in the arteries usually associated with those of chronic renal disease. The ophthalmoscopic appearance is presumably due to hyalin degeneration of the arterial wall. Attention is directed to the effect produced on the veins by arteries overlying. Where the artery, even a small twig, passes over the retinal vein, circulation in the latter is much impaired. In some cases the vein is undistinguishable just at the spot where it has crossed, and is evidently distended for some distance peripherally from this point. The appearance is interpreted as evidence of high arterial tension." His accompanying illustrations showed other evidences, principally those of toxemia, cotton-wool exudates, edema of the nerve-head and retina, also endarteritis, evidenced by reduction in the caliber of one of the arterial branches. Gunn's original description still holds good to-day.

In simple high blood pressure the cardinal signs are (1) marked increase in the arterial light reflex with elongation and tortuosity of the terminal retinal vessels near the disc and macula, and (2) the outstanding phenomenon of apparent interruption in the venous circulation, where a vein is overlaid by an artery, at points of crossing.

In advanced arteriosclerosis there are certain further changes evidenced, and when these are of marked degree they have great prognostic value. The thickening in the arterial wall from endarteritic proliferation and increase in the medial coat may cause the arteries to appear uniformly contracted, of lessened and irregular caliber, and the reflex arterial light stripe is narrower, while the veins are congested, but may also be relatively small. When high blood pressure is followed by, or follows, marked angiosclerosis, the type of the arterial venous crossings, as pointed out by R. Foster Moore, differs from the type found in hyperpiesia. Where an artery crosses a vein, it does so by the shortest possible route and one sees a so-called "right-angle crossing." This phenomenon is attributed, not only to the tightness of the vessels and from translucency due to hyalin or fibrous thickening in its wall, but also to direct mechanical effect of pressure of the sclerosed artery upon the thinner walls of the vein. This constitutes the most uniform evidence of arteriosclerosis combined with hypertension. In addition to uniform

thickening of the vessel, with narrowing of its caliber, frequently one finds also irregularity in caliber of the arteries in advanced angiosclerosis. This may be so extreme as to almost obliterate the artery. The contraction may be very uneven and patchy, giving rise to a beaded appearance. At other times, rarely but especially in syphilis, perivasculitis occurs with marked evidence of thickening of the adventitia. Retinal hemorrhage in purely sclerotic changes represents evidences of stasis permitting diapedesis, from the combination of hypertension and degenerative changes in the vessel walls of high degree rather than from the blood chemistry changes of toxic retinitis. One does not frequently see hemorrhage in essential hypertension without evidences of vascular degeneration.

R. Foster Moore first described angiosclerotic retinitis, which is distinct from that seen in connection with renal disease. It is much more frequent when hypertension accompanies angiosclerosis. It is characterized by bright white spots or dots in the retina, seldom of greater diameter than the veins, with no exudate around them. Their favorite site is along vessels, near the nerve-head, or in and around the macula, or between the macula and the nerve. These spots are sharp-edged, round or oval, seldom distinct, and probably represent degenerative or nutritional changes in or near the lamina vitrea, or very small patches of localized exudate or hemorrhage in the superficial choroid or deep retinal layers. Moore has seen them disappear, and new ones form. Occasionally, stellate formations around the macula or a fan-shaped figure between the disc and macula may be observed. These spots are distinctly different from the toxic changes, white woolly patches or so-called snowbank exudates, noted in renal retinitis. Stellate figures may represent a sequence of macular edema and are considered by most ophthalmoscopists as evidence of renal disease, but they occur also with syphilis and not infrequently with choked disc from intracranial pressure. When seen with hypertension and arteriosclerosis with scant albumin or a few casts, we assume we are dealing with a process in the kidney essentially of the vascular type, the so-called arteriosclerotic kidney. These patients may survive many years after retinal changes are found, and die more frequently of cardiac or cerebral complications than from uremia.

The importance of these vascular changes is this: when evidence of beginning retinal angiosclerosis is present in a person in middle life, especially if the evidence of increased intravascu-

lar tension is marked, we may be able to seek causative factors and remove them at a time when preventive measures may do some good. It is not always possible to diagnose types of cardiac or renal disease, syphilis, or intracranial lesions from fundus examination alone without the aid of the internist, the neurologist, and the

laboratory, but the ophthalmoscope very frequently affords information of value in estimating the extent to which the disease has progressed.

(The above paper was accompanied by original drawings especially illustrating vascular changes.)

## ARTIFICIAL LIGHT THERAPY\*

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Of the physical means of treatment, light has occupied first place in scientific and medical fields for a long time. A review of the literature shows the large amount of laboratory and clinical research being done on this subject. It is really a misnomer to call it light therapy, as the kinds of radiant energy used for treatment are the invisible wave lengths of the spectrum.

Radiation travels through the ether in wave form. The two common ways of expressing wave lengths are in Angström units, which are one ten millionth of a millimeter, and in millimicrons, which are one millionth of a millimeter. A beam of light entering a transparent body, such as glass or water, at an angle has its direction and velocity altered, and this is called *refraction*. The shorter the wave length the greater the refraction. If a beam of light from a temperature radiator falls upon the face of a dispersing prism, that portion of the radiation which is not reflected is refracted at the surface of the prism and is thus decomposed, and thus the visible spectrum is produced. The longer wave lengths are the red, and beyond the red are the invisible heat rays called the infra-red, shown by their action on the radiometer or the blackened bulb of a thermometer. At the other end of the spectrum are the invisible ultraviolet rays detected by fluorescence or their action on photographic silver salts. Glass absorbs ultraviolet wave lengths shorter than 3,300 Angström units, quartz absorbs those shorter than 1,850, and for the region beyond that fluorite lenses must be used.

Temperature radiators are solids or liquids that become luminous when their temperatures are raised sufficiently. When the temperature of a body is being raised it sends out waves of

low frequency—long wave lengths, 500 degrees C.—red, and at 1,400 degrees C. violet. Incandescent vapors produce spectra of one or more bright lines, each line spectrum characteristic of some chemical element. The best known temperature radiator is the sun. The sun spectrum contains dark spaces known as Fraunhofer's lines due to the absorption of the radiation by the incandescent vapors of the sun's atmosphere.

There are three common sources of ultraviolet energy. The sun gives off rays of high intensity in the near ultraviolet region from 3,970 Angström units to 3,400, and much lower intensity from 3,400 to 2,900. The carbon arc produces strong ultraviolet from 3,970 to 3,000, and many weak and a few strong spectral lines from 3,000 to 2,000. The mercury quartz arc produces strong lines down to 2,300 and weak to 1,850.

The carbon arc lights are of two types: high and low amperages. They generate rays that have a spectral distribution similar to that of the sun, namely, invisible heat, the visible and the longer ultraviolet rays. Some of these lights are advertised as non-burning, which means they have eliminated the short ultraviolet rays. This, as far as our experience goes, is a distinct disadvantage, as an erythema and pigmentation are most desirable. The carbon arc light advertisements often claim superiority over the mercury quartz lights due to the fact that their spectra are continuous, while the other has gaps. In the experience of users it has not been proven that this is a disadvantage.

The mercury quartz light has a burner of a quartz vacuum tube, with the cathode of liquid mercury. When the circuit is completed the liquid mercury vaporizes and becomes luminous. These lights emit a large quantity of long and short ultraviolet rays, and from our experience are more valuable than the carbon arc lights of

\*Presented before the South Dakota State Medical Association, at Huron, S. D., May 4, 1927.



low amperage.

Reflectors reduce the intensity of the ultra-violet radiation. Metallic silicon is the best reflector, giving about 65 to 75 per cent through the entire range, while aluminum gives 70 per cent at 3,970 Angström units and 23 per cent at 1,850.

A body is transparent to radiation of certain wave length if that radiation passes through the body without undergoing any changes and without loss except that due to reflection from the two surfaces. The transparency of a transmitting medium is in general greater for longer than shorter wave lengths. Fused quartz is one of the most transparent substances known, and is used therefore in the burners and in the quartz rod applicators of the water-cooled lights. A rod of quartz one meter long will transmit 98 per cent of the total visible light passing into its one end.

When radiant energy strikes a body and is neither reflected nor transmitted it is absorbed and undergoes a change in one or more ways: the temperature of the absorbing substance is raised, chemical reactions occur, the electrical state is altered, or the radiation of another wave length may be reëmitted into the air.

The production of visible radiation is not always accompanied by high temperature, and luminescence is when a body is caused to give out light without being raised to high temperatures. Fluorescence is when a body absorbs radiation and emits it at another wave length. For example, the *x*-ray fluoroscope shows the invisible short *x*-rays falling on a screen of barium platinocyanide and changed here to longer visible rays. Phosphorescence is when the substance absorbs the radiation faster than it emits it, and the emission persists after the exciting radiation is cut off, for example, eosin.

Bovie has given us much information concerning the action of light in animal and plant life. The two regions in the solar spectrum that are especially absorbed by protoplasm are the infra-red and the ultraviolet. With decrease in the wave length of the ultraviolet the absorbability increases, while the *x*-ray shows with decrease in wave length a decrease in absorbability. Functional disturbances observed after irradiation of living organisms are dependent on the site at which absorption occurs and the wave length of the radiation. Exposing paramecia to fluorite rays, 1,600 Angström units, caused with small doses an increased rapidity of motion. Further increased dose deprived them of their coördination so they swam in circles. These

rays are not absorbed by the nucleus and cause no change in it. Quartz rays, 1,850 Angström units, are only slightly absorbed by the cytoplasm and are strongly absorbed by the nucleus, so that exposure to these rays caused inhibition of cell division without any visible effect on motility. This is succeeded by a period of accelerated reproduction.

Bovie has also demonstrated that protoplasm sensitiveness to ultraviolet radiation is increased by heat. The same intensity of fluorite waves at 17 degrees C. produced 3 per cent cytolized cells and at 25 degrees C. 66 per cent, but with non-irradiated organisms no cytolysis appeared even at 32 degrees C. for two days.

The influence of light on growth was demonstrated by Bovie on chickens. There were three groups. The chickens of the first group were allowed to run outside in the open sunlight, the second group were exposed to the rays of the mercury quartz light for twenty minutes each day, and third group received only the sunlight that passed through the glass roof of the greenhouse. The first two groups grew and developed in a normal manner, while the third group under glass did not. So that chickens at least are dependent for proper growth on the narrow band of the spectrum between that transmitted by glass 3,300 Angström units and that of the lower limit of the solar spectrum, 2,900.

In another series of experiments by Steenbock, etc., five groups of chickens were studied on the same ration:

1. In a dimly lighted basement.
2. All-day exposure to sunlight.
3. Ten minute exposure daily to sunlight.
4. Sixty minute exposure daily to sunlight.
5. Ten minute exposure daily to quartz light rays.

The first group died at six weeks at a weight of 100 gms. The second group at eight weeks weighed 250 gms. The third group were like group one. The fourth and fifth were better than one and three but not as good as two.

Berthold found that light furthers the growth of the hair and nails.

Eckstein found that irradiation of animals had no effect on those living in favorable environment, but had a good effect on those kept in dark cages. Confinement in darkness over long periods does not necessarily lead to rickets if the diet is sufficient. There is no reason to believe that the growth of higher animals is dependent upon light.

Experimental wounds irradiated show increased epithelialization, lymph and leucocytes

are drawn into the wound, and the cells stimulated to repair. We have found this true in our clinic in open wounds where the rays can be directed into the wound.

The effect of light on the shape and growth of plants is well known, and the phenomenon of the plant bending toward the light is another action of light on the growth that we commonly observe.

The recent studies of the relation of light to rickets have done much to show the influence of light on growth and nutrition. Rickets is possibly a primary difficulty in the ability of the intestines to absorb calcium and phosphorus, causing a low concentration of these elements in the blood serum and a defective calcification of the bones. With no change in the diet, either cod liver oil or ultraviolet rays causes an increased absorption of these elements from the intestines, and increased amounts of these elements are found in the urine after ultraviolet radiation. In our clinic we expose children with rickets to the air-cooled mercury quartz light, general body exposures, starting at 40 inch distance for two minutes, increasing the time one minute every day if there is no reaction of the skin, or every other day, up to twenty minutes for each exposure. Giving two exposures, one anteriorly and one posteriorly. They soon lose their muscular weakness, irritability, and sweats; show an increase of blood phosphorus; and the x-ray shows an increase of calcium deposited in the epiphyses. Ultraviolet radiation, in our opinion, shows quicker results than with cod liver oil alone.

Spasmophilia is another disorder in the calcium metabolism. The use of the ultraviolet rays is again the method of choice in the treatment. Convulsions are stopped and the increased irritability of the facial nerve ceases. The blood calcium gradually becomes normal.

Infantile tetany is also a disorder of calcium metabolism and associated with a disturbance of the parathyroid glands. Grant and Gates in some experiments showed a regular hypertrophy of the parathyroid glands of rabbits exposed to the rays of the mercury quartz light. Children with this condition show quicker improvement under the ultraviolet radiation than the cases of rickets.

Various inert foods, ordinarily possessing no antirachitic properties irradiated with the mercury quartz light, may be transformed to those possessing antirachitic potency, such as cotton seed and olive oils, wheat, and many others. Cholesterol obtained from the brain and present

in cod liver oil is entirely inactive until after exposure to ultraviolet light. Hess demonstrated that rats on a ricket-producing diet did not develop rickets upon the addition of irradiated calf skin to their diet, while those fed with untreated skin did. He has suggested a theory that the skin contains a large amount of cholesterol, that this is activated by the ultraviolet rays, rendered antirachitic and may be the cause of the cure in rickets.

Light will kill almost all bacteria, but there is considerable variation in the rapidity of their destruction. Bovie found that ultraviolet wave lengths below 2,800 Angström units were most destructive. In this connection it must be remembered that there is no evidence that one kind of protoplasm is much more resistant to ultraviolet light than another; therefore in attempting to sterilize pus pockets or sinuses it is difficult to get the rays to the bacteria to kill them without destroying normal tissue, especially as the tissues will absorb considerable of the rays, and the pus around the organisms will protect them.

In this connection photosensitization studies have been made to render bacteria more sensitive to light. The action of all rays according to Hertzel was increased by eosin. The sensitizing action of photodynamic substances has also been observed in warm-blooded animals. Mice previously injected with hematoporphyrin and then irradiated show marked increase in their reaction to light, with acute inflammation of the skin. It has been reported that workers in coal-tar products had burning and itching of the skin when light fell on the parts and that this was absent at night or in the shade.

The effect of ultraviolet rays on the blood is disputed, except, according to nearly all results, it stimulates a lymphocytosis in both men and animals. We believe that this is the cause of the good results we have had in our clinic in cases of adenitis from low-grade infections. Many observers report an increase in the red blood cells and hemoglobin, but many of these results have been from places at high altitudes, and altitude alone will cause this increase.

Cramer and Drew found that animals kept in a dark room from birth showed no signs except an abnormally low number of blood platelets. Purpura hemorrhagica shows also a reduction in the number of blood platelets in addition to a prolonged coagulation time. Sooy and Moise used ultraviolet light for this reason in a small number of these cases to an advantage.

Colebrook and others found that mild irri-



tants, including heat and ultraviolet, when applied to the shaved skin of rabbits increased the bactericidal power of the blood. We have used it on these grounds in cases of infection with good results.

Ultraviolet rays only penetrate the skin to 0.1 mm. to 1 mm. while infra-red rays penetrate to about 1.5 cm. The histological effect of ultraviolet rays on the skin is primarily a degeneration of the prickle cells. Possibly due to the toxins from these destroyed cells, there is an accumulation of red and white cells in the radiated area with a dilation of the capillaries. Smith believes that the skin pigment, melanin, is a product of an enzyme contained in the epithelial cells and a colorless chromogen, closely related to a chemical substance called shortly "dopa." Negroes have the enzyme and the power to produce their own dopa, while white people have enzyme and an insufficient supply of dopa. They become pigmented when the dopa is supplied through the circulation, as in Addison's disease, or by the local action of the ultraviolet light. The pigment protects the skin from an excess of light and pigmented skin is more resistant to outside infection. In our experience patients who pigment easily improve more rapidly with ultraviolet rays than those who do not.

The mercury quartz light has a definite and useful field in dermatology. In varicose ulcers of the leg nothing is more striking than its action on a foul ulcer. Using the air-cooled light at 40 inches, starting at three minutes and increasing the time and decreasing the distance, the rays will clean up the ulcer and start epithelial proliferation. Birthmarks of the portwine type are treated by the water-cooled light pressed firmly against the skin to get a blistering burn. Our results have been excellent in alopecia areata, using the water-cooled light to get a fair erythema. The air or water-cooled light can be used to clear up cases of psoriasis, but will not prevent their recurrence. Lupus vulgaris was one of the first diseases to be treated by artificial light. Finsen used a carbon arc light for this, and his successor, Dr. Reyn, claims that he gets better results at the start and has more permanent cures with the concentrated carbon arc rays than with the mercury quartz rays. We have used the latter with good results, using the water-cooled light to get a severe local reaction. Acne vulgaris is often benefited by these rays, possibly not as often as with  $x$ -rays, but these rays are absolutely without danger of lasting burns. Pityriasis rosea and eczema are often benefited by these rays. They

have some value in the treatment of chronic ulcers and telangiectasia caused by  $x$ -rays or radium, but have no prophylactic value against acute or chronic radiodermatitis.

In ear and nose conditions the ultraviolet light has been used in our clinic with some good results in chronic otitis media and some sinus conditions, but the number of cases have been too small to draw definite conclusions. Hollender and Cottle have published a book on this subject, which might serve as a guide in the treatment of such conditions, but their conclusions are not always based on sufficient clinical evidence.

Artificial radiation has no greater field than in the various forms of tuberculosis. Edgar Mayer, in his recent book "Clinical Application of Sunlight and Artificial Radiation," covers this field in a most complete manner. In our experience the most favorable results with artificial light treatment is in the lymph node tuberculosis. We use the water-cooled light over the glands in contact for one minute to produce a severe local reaction increasing to three or four minutes, giving it every other day if the reaction has not been too severe. Along with this general body exposures with the air-cooled mercury quartz light are given every other day, starting at 40 inch distance for two or three minutes anterior and posterior. At times it is necessary to add  $x$ -ray treatment. Several series of case reports show as high as 90 per cent cured.

Intestinal tuberculosis showed with 209 cases analyzed by Brown and Sampson that of 29 who received no ultraviolet treatment 83 per cent died, while of the 180 treated cases 65 per cent are living, and only 35 per cent died. Of course, the beneficial results are hard to prove as many cases of intestinal tuberculosis spontaneously lose their symptoms and recover. The air-cooled mercury quartz light was used. In our treatment of these cases we use general body exposures anteriorly and posteriorly starting at 40 inches for three minutes with an extra minute over the abdomen on the anterior exposure, increasing the time daily or every other day. We secure better results if outdoor conditions are simulated by proper ventilation of the room, even if heat lights have to be used over the patient.

Tuberculous peritonitis is treated the same way, and the results reported are as good as in the intestinal form. We recently treated two post-operative cases with draining sinuses, both draining for over three months, with no improvement in the amount of drainage or gain in

weight. With the above method of general body radiations and local quartz rod applications to the sinus, one healed in three months and the other in four months. The improvement in general condition and weight-gaining started at once.

Bone and joint tuberculosis should be treated with conservative methods except in those who cannot devote the time to it, and with prolonged treatment of general body and local ultraviolet radiations plus correct orthopedic treatment these cases often respond satisfactorily and with much less permanent disability than with radical surgery.

Laryngeal tuberculosis is best treated by general body exposures and with the water-cooled mercury quartz light with a quartz rod reflector. In several cases at the Veterans' Bureau Clinic with marked local symptoms, but arrested pulmonary symptoms, we had excellent results. Here we used the water-cooled light externally also over the larynx.

Genito-urinary tuberculosis is a resistant form, and the reported results are poor. We treated a case for over a year with no results.

In pulmonary tuberculosis sunlight and artificial radiation should be used only after rest, hygiene, and diet have failed to cause satisfactory progress. The carbon arc emits considerable heat rays and should be used only in stationary cases. In these cases carefully graduated doses should be applied, starting with the legs and not exposing the trunk for the first few treatments. In our work at the Veterans'

Bureau Clinic we found many arrested cases with a very small dose of general body radiation would complain the next day that the light was most peculiar as they did not feel anything at any time but that it had given them a cold, indicating some activation.

In general, there are no rules that can be given for dosage of ultraviolet radiation, and symptomatic reactions are the best guide. It is wise to remember that blonde and red-hair patients are sometimes very sensitive to light. I am treating one now who got a severe burning on the start at 40 inch distance for one minute and in forty treatments has only been able to take a four-minute treatment at this distance. Severe general results may occur if an overdose is given to a weak or old patient.

For these reasons the practice of physicians recommending that their patients buy or rent these lights is to be strongly condemned. Bovie has shown that slight changes in dosage can bring about marked changes in the paramcium. Hess has proved that cholestrol activated with antirachitic properties by exposure to ultraviolet light was rendered inactive by excessive doses. Therefore as we know little about the action of these rays we should not encourage the use of these radiations in our patients by self-treatment.

In conclusion, I wish to say that I believe that we are just beginning to properly appreciate the value of this form of energy and it has already earned itself a marked place in our treatment of disease.

## PLEURISY: A REPORT OF 1,017 CASES\*

By D. R. HASTINGS, MD.

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The object of this paper is to discuss and emphasize the significance of pleurisy in its relation to pulmonary tuberculosis. My observations and conclusions are based on the histories and x-ray reports of 1,017 patients admitted to the Glen Lake Sanatorium from January 1, 1916, to January 1, 1925.

Before dealing with the specific examples resulting from my study, I might mention that there are two generally accepted types of pleurisy. The first infection, which is classified as primary, begins in the pleura. The second, commonly referred to as secondary pleurisy, begins in the lung and travels to the pleura.

The secondary type may be divided into two distinct groups, fibrinous pleurisy and pleurisy with effusion. Whereas the first type is of the plastic-dry description, the second is popularly known as "wet" pleurisy, because of the presence of both serous and purulent effusion.

Pleurisy oftentimes is very difficult to diagnose from the historical and physical findings. Frequently the typical friction rub is not heard. Then, too, chest pains from the lung may easily be confused with pleurisy pains. Therefore, the x-ray reports are also employed in order to provide a happy and more decisive medium.

In this series the entire case histories were studied to determine whether or not the patients

\*Presented before Glen Lake Sanatorium Resident and Consulting Staff, July 20, 1927.



had pleurisy and, further, to indicate the particular type.

Generally speaking, one may grasp an idea of what an important rôle pleurisy plays in pulmonary tuberculosis when one realizes that 461, or 45 per cent, of the 1,017 patients examined, reported a history of pleurisy; 532, or 52 per cent, showed no history of pleurisy; while 24 were described as questionable, the grand total being divided as follows:

TABLE NO. I

## PLEURISY REPORTS FROM HISTORIES

Type	No. of cases	Percentage
Fibrinous pleurisy	406	39.43%
Pleurisy with effusion	55	5.50%
Combined fibroid and pleurisy with effusion	461	45.33%
No history of pleurisy	532	52.51%
Questionable	24	2.56%

Brown and Heise, in a report, "Twenty-four Years Experience with the Subcutaneous Tuberculin Test," divide their findings into four classifications as follows:

1. Of the 282 cases reacting to tuberculin, 141 had no history of pleurisy.

2. Dry pleurisy occurred in 129, or 46 per cent of the cases, whereas wet pleurisy occurred in only 10 per cent.

3. Of the 42 cases which did not react to tuberculin, 26, or 61.5 per cent had no pleurisy; 15, or 38 per cent, had dry pleurisy; and 1 case, or .5 per cent had pleurisy with effusion.

4. Of the 144 cases revealing a history of dry pleurisy, 129, or 89 per cent, reacted and of the 11 cases with wet pleurisy 10 cases, or 91 per cent, showed a reaction.

The *x*-ray reports of the 461 positive histories of pleurisy at Glen Lake, as contributed by Doctors Allison, Morris, and Gates, were next studied. With the aid of the roentgenogram reports, it was observed that 175 showed signs of pleurisy, as compared to 286 negative findings. These reports compose Table No. II, which follows:

TABLE NO. II

## PLEURISY REPORTS FROM ROENTGENOGRAM FINDINGS

	No. of cases	Percentage
Pleurisy	175	38%
No pleurisy	286	62%

In the next step in the complication of data the roentgenogram reports of the entire 1,017 Glen Lake cases were studied without regard to the histories. Here it was found that 29½ per

cent, or 300, revealed the presence of pleurisy in one of the two major forms, while 717, or 70½ per cent, manifested no signs, as shown in Table No. III:

TABLE NO. III

## PLEURISY ROENTGENOGRAM REPORT OF 1,017 CASES

Type	No. of cases	Percentage
Fibrinous pleurisy	272	26.75%
Pleurisy with effusion	28	2.75%
Combined fibrinous and pleurisy with effusion	300	29.50%
No pleurisy	717	70.50%
Questionable	0	00.00

Returning to Tables Nos. I and III, the resultant figures indicate the preponderous presence of parenchymatous lesions. Of the original 406 cases which displayed the presence of fibrinous pleurisy by history, 381, or 93.84 per cent, revealed positive parenchymatous lesions by *x*-ray, as compared to 25 which did not. Of the 55 cases of wet findings by history, 49, or 89.09 per cent, showed positive parenchymatous *x*-rays as against 4 negative cases.

The same overwhelming presence of parenchymatous lesions was apparent in the study of the pleurisy cases by *x*-ray. Of the 147 cases of dry pleurisy by *x*-ray, there were 131, or 89.11 per cent, positive parenchymatous *x*-rays, and 16 negative. Of the 28 cases of pleurisy with effusion by *x*-ray, 26, or 92.88 per cent, revealed positive findings, with only 2 negative.

TABLE NO. IV

## PARENCHYMATOUS X-RAY FINDINGS IN HISTORIES

No. of cases	Findings	Percentage
406 (dry)	381 positive	93.84%
	25 negative	6.16%
55 (wet)	48 positive	89.09%
	4 negative	10.91%

TABLE NO. V

## PARENCHYMATOUS X-RAY FINDINGS IN X-RAYS

No. of cases	Findings	Percentage
147 (dry)	131 positive	89.11%
	16 negative	10.89%
28 (wet)	26 positive	92.86%
	2 negative	7.14%

Data collected by Heise and Brown and published in their "A Study of the Occurrence of Hemoptysis, Pleurisy, Râles, Tubercle Bacilli and X-ray Findings in 1,000 Consecutive Cases Admitted to the Trudeau Sanatorium," tend to amplify the significance of pleurisy in pulmonary tuberculosis and the presence of parenchymatous lesions. In this report their findings were divided into four classifications:

1. Of the 611 cases with dry pleurisy, 470 showed a parenchymatous  $x$ -ray lesion.

2. Of 47 cases of wet pleurisy, 30 showed a parenchymatous lesion.

3. 47 cases, or 5.7 per cent had wet pleurisy; the non-tuberculous showed no indication of effusion.

4. 470, or 57.6 per cent of the cases had dry pleurisy or pains in the chest.

With the histories, physical findings, and roentgenogram reports disposed of, a study was then made to determine the presence of pleurisy in so far as age is concerned. The conclusion indicates that pleurisy occurs at any age, but that the decade between 20 and 30 proves the most susceptible, with the fewest cases numbered in the span from one to thirteen years of age. The complete record is as follows:

TABLE NO. VI

## PLEURISY AT VARIOUS AGES OF LIFE

	1-13	13-20	20-30	30-40	40-50	50 or over
Histories	7	50	196	131	51	26
X- rays	11	25	124	72	32	36

Oftentimes many years elapse between the time when pleurisy first occurs and the date when there is enough trouble to make a definite diagnosis. Disregarding those classes classified as questionable, the Glen Lake report revealed that the largest number of cases of tuberculosis occur within one year after the diagnosis of pleurisy.

TABLE NO. VII

## PLEURISY IN RELATION TO AGE

No. of years between date of pleurisy and date of diagnosis of T. B.	No. of cases of pleurisy by history	No. of cases of pleurisy by x-ray
1 mo. to 1 yr.	175	84
2-3	29	8
3-4	31	4
4-5	18	5
5 yrs. or over	58	26
Questionable	150	173

In summarizing, we find that the case histories and  $x$ -rays of 1,017 cases admitted to the Glen Lake Sanatorium were studied to determine the significance of pleurisy in its relation to pulmonary tuberculosis. Of these slightly more than 45 per cent revealed pleurisy in the historical findings and 52 per cent showed no such trouble. Compared to these were the roentgenogram reports, which showed 29.5 per cent positive cases, and 70.5 per cent negative. Further, of the 461 cases which revealed the presence of pleurisy by history, only 38 per cent manifested

such trouble on the  $x$ -ray reports, while 93 per cent of the fibrinous pleurisy revealed positive parenchymatous lesions and 89 per cent of the cases of effusion revealed parenchymatous lesions. These parenchymatous lesions, which are present to a large extent in frank pulmonary tuberculosis, are also proven to be present in the vast majority of cases of pleurisy. These findings agree with the findings in a similar survey conducted by Brown and Heise at Trudeau Sanatorium.

In the concluding steps of the study, the various cases were considered to determine the prevalence of pleurisy in its relation to age, and the time which generally elapses between the diagnosis of pleurisy and the diagnosis of tuberculosis, all contributing to emphasize the large part in tuberculosis played by pleurisy.

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## BOOK NOTICES

A MANUAL OF THE DISEASES OF THE EYE. For students and general practitioners. By Charles H. May, Director and Visiting Surgeon, Eye Service, Bellevue Hospital, N. Y., 1916-1926; Consulting Ophthalmologist to the Mt. Sinai Hospital; to the French Hospital; to the Italian Hospital, N. Y. & to the Monmouth Memorial Hospital; formerly Chief of Clinic and Instructor in Ophthalmology, College of Phys. and Surgs., Medical Department, Colum. Univ., N. Y. Twelfth edition, revised with 374 Original Illustrations including 23 plates, with 73 colored figures. New York: William Wood and Company, 1927.

The twelfth edition of this book brings it up to date in every respect. It should maintain its lead as the best student's text book in ophthalmology.

—KENNETH A. PHELPS, M.D.

DISORDERS OF THE NOSE, THROAT, AND EAR, PROBLEMS OF DEAFNESS. By Aaron Roth, M.D., F.A.C.S., with original illustrations by the author. 238 pages. Brooklyn, N. Y. Physicians and Surgeons Book Company, 1927.

This book is written for the layman in non-technical language. If there is any need for such a publication, this book will serve its purpose. The entire field is covered in a comprehensive and instructive manner.

—KENNETH A. PHELPS, M.D.



# THE JOURNAL-LANCET

Represents the Medical Profession of  
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The Official Journal of the  
North Dakota and South Dakota State Medical Associations  
The Hennepin County Medical Society  
The Soo Railway Surgical Association  
and The Sioux Valley Medical Association

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OCTOBER 15, 1927

## THE CENTRAL NEUROPSYCHIATRIC ASSOCIATION

The meeting of this Association took place in Minneapolis on the seventh and eighth of October. A part of the meeting was held in St. Paul, where a banquet was given at the Minnesota Club, after which there was a meeting. Dr. C. Eugene Riggs, of St. Paul, read his "Neurological Reminiscences," citing the early history of neurology and the formation of neuropsychiatric units, and how neurology had developed, not only in the East, but in the West,—an historic document. Following this D. E. Minnich, Ph.D., Associate Professor of Animal Biology at the University of Minnesota, delivered an address on "Man and the Insect," a comparative study in sensory physiology and behavior, which was intensely interesting and quite different from the ordinary papers presented at a neurological or medical meeting. It was quite evident, too, that those who were present enjoyed the paper very much, and it will probably stimulate doctors to study biology more carefully. The "Report of the London Meeting of the American and British Neurological Associations" was postponed until the following day, but did not materialize.

The meeting began on Friday morning at nine o'clock in the amphitheater of the University

Hospital at the University of Minnesota, and approximately seventy men were present, representing various parts of the Northwest, Canada, and the South. The program was introduced by A. T. Rasmussen, Ph.D., Professor of Neurology, Department of Anatomy, University of Minnesota, on "Innervation of the Chest," a profoundly interesting study and quite unusual for its manner of presentation.

Then came a symposium on "Experimental Pernicious Anemia" by Drs. J. P. Schneider and J. B. Carey, internists of Minneapolis. The next paper in the symposium was "Neuropathology of Pernicious Anemia," by Dr. A. S. Hamilton, of Minneapolis. Following this was a paper on the "Vibratory Sensation in Pernicious Anemia," by Dr. R. S. Ahrens, of Minneapolis.

The clinical side of the program was introduced by Dr. Gordon R. Kamman, of St. Paul, in a Neuropsychiatric Clinic. He gave a clinic on a narcolepsy, pyknolepsy, and epilepsy.

"Observations from the Day's Work in Psychiatry" was a dual paper read by Dr. Charles R. Ball, of St. Paul. His paper was presented on lantern slides, and each section was thrown on the screen so that everyone could read it while he talked the subject, following his text closely—a very instructive paper on the simplification of psychiatric problems, and urging again the necessity of studying the family history with extreme carefulness. This seems to us to be a very proper way to present a paper, because if a man's voice is not a carrying voice one can see what he is saying on the screen. We know of a whole lot of men who might follow this method advisedly. As a rule an amphitheater in any building, and particularly one intended for the instruction of students, is so constructed that unless it is filled to capacity the voice has poor carrying power, for the echo and resonance of the walls destroy whatever the man may have to say.

The organization then recessed for luncheon at the Town and Country Club, where they had luncheon tendered them by the Minnesota Neurological Society. Then they were at it again, with a meeting at two o'clock. A paper was read on "Decorticate Rigidity," by Dr. N. J. Berkwitz, a Fellow in the Department of Nervous and Mental Disease, University of Minnesota. He, too, had clinical material,—a monkey which had been decorticated the night before, and which illustrated the conditions in his paper, showing the contractions and contractures and relaxation of muscles in both the upper and low-

er extremities. This corresponds to various types of cortical disease which produce the same contractural muscle states.

"Experimental Poliomyelitis," by Dr. J. C. McKinley, detailed his experiments in devising a vaccine or serum which would produce poliomyelitis in animals, and, although he very modestly said that he could give no final data in his experiments, he really showed quite clearly that he had been very successful in localizing the virus which produces poliomyelitis.

A Neurological Clinic was given by Dr. E. M. Hammes, of St. Paul, in which he demonstrated what he called a Lipodystrophy, in a young woman who had extreme atrophy of the muscles of the face, chest, arms, and legs. Another case was that of a young woman who had a maldevelopment of her pelvic organs. She had no labia for all the fat had been absorbed or had disappeared through her disease leaving only a small opening. She also showed the same conditions of affairs in her arms and legs. He showed, too, a girl who had hemangioma of the spine, which had caused a paraplegia. She was operated on twice, and a huge part of the angioma was removed. Her recovery was rather remarkable. She walked about the arena with only a slight evidence of her spinal involvement. He then showed a boy who had a frontal and later a cerebellar headache. It was decided that the headache came from some trouble in his frontal sinus, and that was operated on and dissection disclosed an abscess in the frontal lobe of the brain. The operation seemed to be successful, but the abscess recurred and a second operation was performed and the abscess drained, which resulted in a very satisfactory recovery leaving only a protrusion over his forehead, which was well covered by his hair.

A Psychiatric Clinic was given by Dr. W. A. Jones. The first case presented was a man of sixty who had been obsessed for a few months with the idea that he had bugs all over his body, which required scratching, on his part, to remove them, and covered not only his back and chest but his legs. He had the idea that some of the bugs were large and some were small. He was frequently hunting around in various places, in his room and in his bed, for the objects of his attack. He was introduced as a dermatological case, a man suffering from a "skin disease." But after he had left the room it was shown by the history that he was a mental case. His father had died after a period of ten years of a dementia. The man himself had been married for twenty-five years, his wife

becoming insane at the birth of her first child, and she was in a state institution for a time and then returned home, slightly improved, and these two people had gone on living together, the man caring for his mentally afflicted wife. Their oldest son became insane and was sent to a state institution. Considering the devotion of this man, his long-continued work and his religious training, he was kept well under the handles of the plow, so that he became rather penurious and odd; and after his long association with his mentally disordered family he finally broke. It was thought at first that his itching came from farm dust, which is quite possible as a starting cause. But it was also shown that other people who have developed mental trouble have the same chain of symptoms, that is, the feeling that they are covered with insects. The one important question arising from this case, however, is whether it is right, whether it is wise, for such people to produce progeny. One disaster occurred in the first boy, and there are now two other living children; what will be their fate? Why could not the wife have been sterilized early in life, thus eliminating the possibility of further mental disease in the family? The second case was that of a woman of thirty-two who was really a puerperal case, extremely depressed, with a child four months old whom she nursed for three months; but during the last month it was found that she had become ill and also had been cared for by a practical nurse who filled her mind with a recital of her experiences among venereal cases until the patient became frightened and filled with the same ideas of herself,—that she was unclean, evil, and she was in constant fear of infections, particularly of the venereal type. She became disoriented and believed that she was destined to become an individual who had returned evil for good. This again brings up the question of the practical nurse and shows what chances we are taking by employing them unless they are carefully investigated; if they are disseminating unclean and unwise ideas, they should be barred from nursing anyone.

The third case was that of a boy three and a half years old who had nodding epilepsy; his face, while at the table, would suddenly be precipitated into his plate, but the attack would last only for two or three seconds. In the meantime he had developed occasional major epilepsy. A rather curious coincidence developed in the family in that a younger brother, two and a half years old, began six weeks ago showing the same attacks that the first boy had, nodding attacks



interspersed with major attacks. Nothing in the family history could be discovered that would give any clue to how the epilepsy developed; the parents are both healthy and fine people.

The next clinic on the program was on "Neuropsychiatry and the Public General Hospital," by Dr. J. C. Michael, and dealt largely with the varying material which drifts into a public institution, and also with Dr. Michael's experience in treatment of paralysis by the malarial method. The last clinic on the program was a Neurological Clinic by Dr. Arthur Sweeney and Dr. George N. Ruhberg, of St. Paul, dealing with concussions of the brain, a subject which has long been of interest to Dr. Sweeney and his associate.

On Saturday morning Dr. A. W. Morrison, of Minneapolis, gave a paper on "A Further Discussion of College Mental Hygiene," which was extremely interesting and showed decided advance in our understanding of mental hygiene and its uses.

A Neuropsychiatric Clinic was given by Dr. H. B. Hannah, of Minneapolis, on "Freidreich's Ataxia," in which, after much trouble and concern and travel in the country, he secured some interesting cases and exhibited them before the Association. Dr. W. H. Hengstler, of St. Paul, gave a Neurological Clinic showing a patient who had been injured a few years ago in the left shoulder and chest; and the man who had seen him decided that on account of his areas of anesthesia and his motor and vasomotor difficulties that he was a probable case of syringomyelia. "Quantitative Studies on Human Muscle Tonus" was given in a symposium of speakers, Dr. J. C. McKinley, Dr. N. J. Berkwitz, and Dr. D. J. Hutchinson, Department of Nervous Diseases of the University of Minnesota Medical School.

### CALCIUM LACTATE

The salts of lime are present in a very large amount of the tissues of animals, and it offers an opportunity for study of the various forms of calcium and their relation to the inorganic constituents of bones and teeth and the vertebræ or their cells. Lime salts are found, too, in a considerable amount of soft tissue and are, in fact, essential to many forms of living matter and to the activity of certain ferments. Likewise they are responsible for chemical reverses of the human physiology, sometimes due to the increase of calcium salts but more frequently to the

diminution of the calcium. And it has become quite the thing now to examine the blood for calcium salts in order to help one in diagnosis or in order to define a form of treatment due to the absence of calcium. The soluble lime salts are absorbed with great difficulty from the stomach and bowel. They also retard considerably the absorption of fluid. The greater proportion, taken either in food or as a remedy, unquestionably leaves the body in the stools entirely unabsorbed, while a small quantity of it is taken up from the alimentary canal, whether the lime be administered in a soluble or insoluble form. This small quantity circulates in the blood, probably in combination with the proteids, and is very slowly excreted unless there is a deficiency in the supply of lime when it may be utilized by the tissues. When larger quantities are thrown into the blood stream by intravenous or hypodermic methods, the calcium of the blood remains abnormally high for some time, but all the calcium thus injected is not in circulation throughout its stay in the body. Some of it is temporarily deposited in some unknown organ and is gradually withdrawn and excreted as the first excess is eliminated. The urine excretes part of the salt but not very much, and it is usually changed when it shows in the urinary output. It is said that calcium bromide may have some effect if absorbed, but this is due to the bromide ion and would be the same if an equal proportion of sodium bromide were taken up by the blood. When the food or the body contains a deficiency of lime there may be marked abnormalities develop, resembling closely those of rickets and osteomalacia, so that we consider rickets a condition in which there is lime starvation. This effect is more noticeable on children and young people than it is on adults.

The investigation of the effect of lime in various disorders has been studied more recently with greater care, and not infrequently we find that many people unsuspected before have a deficiency in their organisms, yet everything and everybody, plants, animals, and humans, needs lime. It is not possible to get much effect from the administration of lime salts, especially the calcium lactate, unless given in large doses. The writer remembers very regretfully that he was undertaking to treat a case of urticaria, or hives. The young woman had red blotches on her skin, at all events. He faithfully injected her intravenously with all sorts of things, everything but the right thing. She went to her home in the country, and her doctor, who happened to be a wise man, put her on large doses of calcium lac-

tate, and she promptly recovered. So calcium lactate must have its uses in conditions of that sort, but no one can tell definitely until it is ascertained from a careful analysis of the blood what are the actual conditions. It is safe to say that there is frequently a lime deficiency in children probably suffering from many different disorders but particularly anything that borders on rickets, and not infrequently those who are suffering in childhood from epilepsy of various types. The use of the lactate form of lime is very safe, and it certainly has an effect on the chemistry of the organism. It is said that rickets is not due to a lack of lime in the food, nor in fact in the tissues generally, but to some abnormal condition which prevents the lime salts from being deposited in the bones although they are present in abundance in the blood. But in the case cited above, it would seem as if the general chemistry of the body had much to do with the absorption or the physiology of the effect of calcium lactate.

### NEWS ITEMS

Dr. L. W. Kruger, of Mapleton, will spend the winter in Kansas City, Mo.

Dr. H. T. Frost, of Wadena, is doing postgraduate work in Chicago and New York.

Dr. P. F. Eckman, of Duluth, was married last month to Miss Hulda Liner, of St. Paul.

Work was begun last week on a new hospital to be built by Dr. D. B. Rice, of Britton, S. D.

Dr. A. N. Flaten, of Edinburg, N. D., was married last month to Gladys Nasinec, of Conway, N. D.

Dr. Gisle Biornstad, of Minneapolis, has returned from a trip of three months to the European clinics.

Dr. A. R. Blakely, of Stillwater, has moved to Osakis. He has leased a fine residence building for hospital purposes.

Dr. William B. Roberts, of Minneapolis, has returned from Vienna where he has been several months studying internal medicine.

Dr. L. A. Schipfer, of Bismarck, N. D., who has been doing postgraduate work for several months in Chicago and Europe, will resume his work in Bismarck.

Minneapolis is promised a 22-story medical and dental building, to cost over a million and

a half dollars and to be erected at Third Avenue and Tenth St. South.

The Regents of the University of Minnesota have approved plans for the building of three units to the Medical School of the University to cost about \$900,000.

Dr. H. B. Wenz, who formerly practiced at Verona, N. D., and who has been, for some years, in charge of a U. S. Government Hospital in Alaska, has located in Fairmont.

It is announced that Dr. V. H. Gardner, of Fairmont, associated with Drs. Miller and H. G. Blanchard, of Waseca, will build a hospital in Fairmont to cost \$50,000 or \$60,000.

Dr. Oliver M. Porter, of Atwater, has moved to Minneapolis and become associated with the Nicollet Clinic. Dr. Porter graduated from the Medical School of the U. of M., class of '05.

Dr. J. H. Garberson, of Miles City, Mont., who spent the summer in the European clinics, delivered an address before the International Rotary Club at Ostend, on the European Clinic, last month.

Dr. Neil John Maclean, of Winnipeg, Assistant Professor of Clinical Surgery in the University of Manitoba, was the guest of the Minneapolis Surgical Club last month when he spoke on "Intrathoracic Goiter."

Dr. R. D. Alway, of Aberdeen, S. D., has gone to Vienna for work in the clinics and will later visit the clinics of London and Edinburgh. Dr. Alway's specialty is eye, ear, nose, and throat work. He will be gone several months.

Dr. W. N. Graves, who has been associated with the Peabody Clinic of Webster, S. D., for the past year, has gone to Europe for postgraduate study for a year. On his return from Europe Dr. Graves will locate at Duluth, Minn.

The four physicians practicing in Pelican Rapids have signed an agreement and published it in the local papers to the effect that they will not make calls upon or render service to persons who do not pay their bills or make satisfactory arrangements to pay them.

Fifty-eight applicants for licenses to practice medicine in Minnesota took the examination, on October 4, required by the new Basic Science law of Minnesota. Six of the applicants failed to pass. The fifty-two who passed are eligible to take the further examinations required.

At the annual meeting of the Southern Minnesota Medical Association held at Austin on



October 1, the following officers were elected: President, Dr. J. S. Holbrook, Mankato; vice-president, Dr. F. R. Huxley, Faribault; secretary-treasurer, Dr. Monte C. Piper, Rochester.

Dr. Walter M. Quinn, of Winner, S. D., died on July 20, at the age of 49. Dr. Winner was a graduate of Creighton University School of Medicine, of Omaha, Neb., class of '05. He began practice at Zealand, N. D., later moved to Bonesteel, S. D., and still later to Winner, S. D.

As this issue goes to press the American Hospital Association and allied groups are in session in Minneapolis. All the conventions open up with a large attendance and splendid programs containing the names of many distinguished men. The exhibits of manufacturers are attractive and instructive.

Professor Gustav Alexander, of the Polyclinic of Vienna, Austria, will be the guest of the Minnesota Academy of Ophthalmology and Otolaryngology in Minneapolis for ten days beginning Monday, October 24. He will speak each evening at the University, and on October 29 will be given a dinner at the Minneapolis Club.

Dr. E. S. Mariette, superintendent of the Glen Lake Sanatorium, of Hennepin County, was appointed chairman of the Sanatorium Section of the Conference on Tuberculosis in St. Louis last week. This honor has undoubtedly been conferred upon Dr. Mariette, by the Conference, in recognition of the splendid sanatorium he has built up. Dr. Mariette was the first resident physician of Glen Lake, and he has been superintendent during its entire history. Miss Kathryn Radebaugh, of Minneapolis, Executive Secretary of the Hennepin County Tuberculosis Association, who attended the St. Louis meeting, reported that more than 300 delegates, representing twenty-five states, were present. We hope to publish a full list of the names of physicians from this field who attended the meeting.

At the recent meeting, in Detroit, Michigan, of the American College of Surgeons, fifteen hospitals in Minneapolis and eleven in St. Paul were accepted as approved hospitals, that is to say, these hospitals conduct their professional work along lines recognized by the College of Surgeons as essential for the right care of patients and for rendering the broadest community service. The list is revised annually, and it now embraces the following hospitals in the Twin Cities: In St. Paul: Ancker, Miller, Gillette,

Midway, Mounds Park, Northern Pacific, St. John's, St. Joseph's, St. Luke's and St. Paul, and conditional approval for Bethesda; in Minneapolis: Abbott, Asbury, Eitel, Fairview, Hillcrest, Lutheran Deaconess, Maternity, General, Northwestern, St. Barnabas, St. Mary's, Shriners for Crippled Children, Swedish, and University. Glen Lake Sanatorium was given full approval.

#### Aberdeen (S. D.) District Medical Society

The September meeting of the Aberdeen District Medical Society was held at the I. O. O. F. Hall in Mobridge, S. D., on Tuesday evening, September 27, 1927, the meeting being called to order by the President, Dr. W. A. Bates, of Aberdeen.

About thirty physicians were in attendance. Five new applications for membership were read: Dr. R. Hester, McIntosh, S. D.; Drs. A. V. Rock and A. J. Larson, Mobridge, S. D.; Dr. L. C. Shockey, Pollock, S. D.; and Dr. C. L. Farabaugh, Herreid, S. D.

The following scientific program was presented: "X-Ray in Diagnosis of Bone and Joint Disease."—By Dr. H. I. King, Aberdeen, S. D.

"Peritonitis."—By Dr. R. L. Murdy, Aberdeen Clinic, Aberdeen, S. D.

"The Use of Iodine in Goiter," Illustrated with Lantern Slides.—By Dr. J. O. Arnson, Quain-Ramstad Clinic, Bismarck, N. D.

"Pyelography in the Diagnosis of Renal Pathology," Illustrated with Lantern Slides.—By Dr. B. H. Hager, Mayo Clinic, Rochester, Minn.

After the program and discussions a fine lunch was served.

R. G. MAYER, M. D.  
Secretary

#### Yankton (S. D.) District Medical Society

The regular fall meeting of the Yankton District Medical Society occurred on September 29.

The weather was ideal, roads good and the membership of the Society was well represented. In addition to the regular members, Drs. Albertson and Ohlmacher, of Vermillion, members of the staff of the Medical School of the University, brought up the senior class consisting of about twenty-five or thirty men as visitors. The total attendance, including visitors, was about seventy-five.

The following program was presented:

"Pernicious Anemia—Treatment and Report of Cases." T. J. Billion, M.D., Sioux Falls, S. D.

"Thyroid Diseases—Some Problems in the Treatment of." C. E. McCauley, M.D., Aberdeen, S. D.

"Diathermy—Clinical Application." Rezin Reagan, M.D., Sioux Falls, S. D.

"Asthma—Treatment of with Ultraviolet Light." L. F. Beall, M.D., Irene, S. D.

"Feeble-mindedness." F. V. Willhite, M.D., Redfield, S. D.

The men upon the program presented their subjects in a thorough-going masterly manner; and the meeting was, upon the whole, an outstanding good meeting.

J. A. HOFF, M.D.,  
Secretary

### The Stutsman County Society of North Dakota

The last meeting of the Stutsman County Medical Society was held September 26, 1927, at 6:30 p. m., at Trinity Hospital.

A dinner was served by the Hospital. Dr. V. J. LaRose, of Bismarck, addressed the Society on "Hematuria."

The following members were present: Drs. H. M. Berg, Joseph Sorkness, D. W. Johnson, W. R. Winn, F. O. Woodward, W. A. Gerrish, W. W. Wood, P. C. Arzt, A. T. Bailey, F. Peake, H. K. Wink, and T. L. DePuy, of Jamestown; Dr. C. P. Buzzell, of Cleveland; and Dr. G. D. Todd, of Medina.

The next meeting of the Society will be held on November 28, at which time a symposium will be held on malpractice, and well qualified representatives of the medical, legal, and malpractice insurance professions will address the Society on the subject.

H. M. BERG, M. D.  
Secretary

### Divisional Meeting of the American College of Surgeons

The divisional meeting of the members of the American College of Surgeons for Minnesota, North Dakota, and Manitoba is to be held in Duluth on November 17 and 18, 1927.

At this time it is planned to have papers, clinics, a lay meeting in the evening featuring hospitals, and the American College of Chicago is going to bring in speakers for this lay meeting.

All members of the American College of Surgeons from these three states, all hospital superintendents, and any other doctors who may be interested, are invited to attend.

W. A. COVENTRY, M.D.  
Secretary

### Minneapolis Office for Rent

Eight-room office suite at 3805 Nicollet Ave. Can be arranged as dwelling and office. Price \$85.00 a month. Drs. Bessessen, 3805 Nicollet Ave., Minneapolis.

### An Associate in Surgery Wanted

Wanted—An associate in surgery and general practice in Minneapolis. State age, school, and hospital service. Address 409, care of this office.

### Laboratory Technician Desires Position

Has had six years experience in urinalysis and hematology in one of the largest Clinics in the country. Best of references. Address 412, care of this office.

### Locum Tenens Work Wanted

By an Illinois M. D. Internship taken at Ancker Hospital, St. Paul. Age 26; single; holds Minnesota license; available on short notice. Address 403, care of this office.

### Clinic Location in Minneapolis (200 Oak Grove, on Spruce)

Will arrange space in this new building, 1,000 sq. ft. or less, for physicians or clinic. Private ground floor entrance. Walking distance. Established drug-store operating. Easy to make a medical center in this rapidly developing commercial, hotel, apartment, and hospital zone

Bellefonte Realty Co., Inc.  
Telephone—Main 4882 804 Besse Bldg.

### Locum Tenens Work Wanted

A recent graduate of the Medical School of the University of Minnesota wants substitute work during November and December. Address 405, care of this office.

### Practice and Equipment for Sale

In a county-seat town in Central Minnesota. Population, 2,000. Fine farming community, thickly settled. Good cash income from the start in an established practice. Address 402, care of this office.

### Laboratory Technician Wants Position

A capable and experienced laboratory technician desires position. Has had four years experience, besides training at Minneapolis General Hospital. Available at once. Address 411, care of this office.

### Practice and Office Equipment for Sale

Well equipped office and practice for sale at Sentinel Butte, North Dakota. Large territory. Good crops. A snap. Terms. Reason for sale, Doctor deceased. Was located here for thirteen years. Address for full information 398, care of this office.

### Good Location for an Eye, Ear, Nose, and Throat Man Wanted

I desire to locate in a good country town in Minnesota, and shall be pleased to correspond with any physician who can recommend such a location to practice my specialty. Address 407, care of this office.

### Work in Doctor's Office Wanted

Young woman wishes employment in a doctor's office, small hospital, or sanatorium or clinic. Have had training in physiotherapy, x-ray, and light laboratory work. Will start with reasonable salary. Work desired in St. Paul or Minneapolis. Address 401, care of this office.

### Practice for Sale in Eastern South Dakota

General practice, pays \$7,000 yearly. Town of 500 with four small surrounding towns. Nearest competition 20 miles. One other doctor. Equipped office, drugs, and introduction, \$500.00. Going to Europe. Address 408, care of this office.

### A Locum Tenens Wanted in North Dakota

I will turn over my practice in North Dakota for two or three months to a good man who will rent my office (\$25 a month). Practice has run from \$7,000 to \$8,000 yearly for a number of years. Town of 800; competition, very little. Address 410, care of this office.

### Practice for Sale

I will turn over my very good practice to a good man buying my office equipment. Easy terms if desired. This is in north central North Dakota, in the best portion of the state. Crops usually good and very good this year and last. This will stand investigation. Address 406, care of this office.

### Fine Minnesota Practice for Sale

In a very prosperous community. Population of town, 1,000, and a community hospital. Only one other physician in town. Practice pays from \$12,000 to \$15,000, and 90 per cent collectible. Will sell for price of building (a good investment) and office equipment, and work with purchaser for three months. A real bargain. Address 404, care of this office.



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## CHARCOT JOINTS\*

BY A. STEINDLER, M.D., F.A.C.S.

Professor of Orthopedic Surgery, State University of Iowa

IOWA CITY, IOWA

Arthropathies, or Charcot's joints, as commonly called after classical descriptions of this author, may be defined as pathological reactions of insensitive joints to strain or traumatism. In rare instances arthropathies are seen in malformations and injuries of the spinal cord, and occasionally in dementia paralytica. The great majority of cases, however, belong to two definite diseases of the spinal cord, namely, the tabes and syringomyelia; of the latter 25 per cent, and of the former 10 per cent, of the cases develop arthropathies. Because of the much greater frequency of tabes compared with syringomyelia, the tabetic cases greatly preponderate in the statistics.

In general, the upper extremity is mainly involved in syringomyelia, and the lower mainly in tabes, although exceptions are not at all uncommon.

In syringomyelia, involvement is usually unilateral; in tabes we see, not infrequently, several joints involved. Owing to the greater incidence of tabes in men, arthropathies prevail in the male sex and are most commonly found between the fortieth and sixtieth years.

The most characteristic symptoms of this type of joint affections are lack of pain and abnormal pathological mobility. Lack of pain is due to the loss of deep sensibility of the joint;

pathological mobility is the result of great destructive changes in the bony and ligamentous constituents of the joint. As the deep joint sensibility is destroyed by the syringomyelitic or tabetic process in the cord, the centrally controlled normal biological reaction of the joint to external traumatic influences is lost, and even defense reactions to inflammatory condition are greatly modified.

All tabetic arthropathies begin with destruction of the tissue, these ultimately leading to disintegration and decay. A pathological debility of the architectonic structure of bone precedes the process of destruction.

Mechanical forces, such as strain or traumatism, to which the joint is normally exposed, precipitate in these weakened and predisposed articulations a chain of pathological events, which Oehlecker, in an extensive study of the subject, describes as follows: One notices, first, destruction in the articular bodies in form of infractions, crushings and collapse of bone. Upon this bone destruction there follows a more or less extensive process of bone production. This bone production is characterized, not only by its excessiveness, but also by its utter irregularity by the total lack of adaptation of the new-formed bone to mechanical and physical stresses, so peculiar to normal bone-production. This latter deficiency, no doubt, is also due to the absence of deep joint sensibility, which, in

\*Read by title before the North Dakota State Medical Association, Grand Forks, N. D., June 1, 1927.

normal bone, is the controlling influence for formation and arrangement of new-formed bone. We may distinguish two types of bone-formation in arthropathic joints. Bone which arises from periosteum and bone itself, and para- and peri-articular ossifications. In all these bone formations, periosteal or para-articular, there is no semblance of any texture or lamellar arrangement of the trabeculæ.

We observe that, in most cases, the distal portion of the joint is usually first and most extensively destroyed. With the repeated mechanical insults, or as an effect of ordinary static functions, a total collapse of the bone structure is encompassed in the distal joint body.

X-ray studies demonstrate the fact that the first change consists of small infractions or fissures. The destructive changes in the x-ray may, for a time, be deceptive; but later, when the reactive changes of most irregular bone-formation becomes evident, the x-ray findings are very characteristic.

Peri-articular ossifications are found in the wall of the capsule in form of small plates, rings, or bean-shaped structures. Free bodies in the joints are rare, although they do occur in tabetic arthropathies.

*Onset.*—Sudden onset of tabetic arthropathies is so common as to be almost typical. Close observation shows, however, that their sudden onset is only apparent. It merely signifies the sudden collapse of the joint which has already been greatly damaged by pathological changes. From the same angle we must also judge the sudden attacks of swelling and discomfort or joint pain. They are altogether effects of mechanical, traumatic factors, which lead to strain or subluxation in an already greatly damaged joint; they disappear upon immobilization.

The early diagnosis of arthropathies is made especially difficult by the fact that many cases make their first appearance in the relatively early stages of tabes; often they occur in the pre-atactic stage, when most of the general tabetic symptoms are still missing. The Romberg sign is often absent, or it is difficult to establish because the severe involvement of the joint in itself makes standing or walking impossible. Argyll Robertson's sign we found absent in a number of cases, and occasionally there is not even a change in the patellar reflexes. One must realize that the arthropathy may be the earliest symptom of tabes and may appear a long time ahead of the general symptoms. In that respect it is to be compared with Argyll Robertson's sign. The free interval be-

tween the joint affection as the first symptom of tabes, and the first general symptom may amount to three, five, and even eight years. Oppenheim mentions a case in which eighteen years after a spontaneous fracture of tabetic joint, the first general symptoms of the disease appeared.

The sudden onset of disability after a more or less definite trauma, is of great importance from the viewpoint of compensation. In a large portion of our cases a definite trauma is mentioned as cause of disability. These are, however, rather incidences in the nature of spontaneous fractures, occurring in an arthropathic joint already considerably disintegrated. The sudden appearance of disability is especially noticeable in arthropathies of the knee joint where the collapse of the inner condyle of the tibia suddenly leads to a marked varus deformity of the knee. We have also observed spontaneous fractures of the neck of the femur in arthropathy of the hip joint. Often the spontaneous fracture is the event which brings the condition to the attention of the surgeon. For the sake of just valuation of the injury in compensation cases, it is of the greatest moment that the underlying tabetic condition be recognized. The slight and insignificant nature of the trauma producing pathological changes out of proportion to the injury sustained, should arouse suspicion. In addition to this, these apparently severely traumatized joints are peculiarly free from pain. On the other hand, we find cases of arthropathies complicated with other non-tabetic joint changes. This leads to a clouding of the clinical picture of the tabetic affection. We found, for instance, in our series, the combinations of tabes with osteomyelitis of the knee joint, ankle, or tarsus. We further observed periodic swellings of the joint and periodic attacks of local, not lancinating, pain, denoting various degrees of joint irritation, synovial hyperemia, and reactive exudation. In all such complications, however, the tabetic background modifies the clinical picture. The course is more torpid, and the normal biological reaction to these complications is considerably toned down. There is no reactive muscle spasm, and, as a result, we find joint mobility is peculiarly preserved even in the face of complicating conditions.

*The Treatment.*—The dominant principle of the treatment is elimination of joint function, whether this be done conservatively by an immobilization method or operatively by excision. In general, the conservative treatment of tabetic



joints is the treatment of choice. In the arthropathic spine Ridlon and Beckheuser, reviewing twelve cases, report favorable results from the application of plaster jackets or leather torsos. For the knee and hip well-fitting braces which immobilize the joint will give satisfactory results. The apparatus must control deformity and must restrict motion so as to avoid secondary joint strains with their subsequent reactions.

In later years attempts have been made to attack the problem surgically. Oehlecker, in his treatise on tabetic joints, reports 11 operative interferences: 4 resections of the knee and 7 osteoplastic amputations of the foot, obtaining firm union in all cases of resection. Schoonheit and Allmann, as early as 1898, reported first on the result of the operative treatment of tabetic arthropathies.

Our operative experience on forty patients is restricted to four resections of the knee, and three amputations.

#### STATISTICS

This series of ours includes 40 patients, with 55 joints affected, distributed as follows; knees, 20; ankle, 15; spine, 10; hip, 6; elbow, 2; mid-tarsal joint, 2.

Combinations of knee and ankle involvement, usually on opposite sides, were found in 6 cases; of elbow and knee, in 1 case; of ankle and knee and also osteoarthritis of the spine, in 1 case; knee and spine, 1; hip and spine, 2; ankle and spine, 1. Both cases involving the elbow joint were tabetic.

Even in the comparatively small series of 40 tabetic joints there were enough atypical features to make their analysis worth while.

The tabetic joint appeared as the first tabetic symptom in 7 cases out of 40, while in the remainder of the cases it followed other early tabetic symptoms. Of these early tabetic symptoms, the absence of the knee-jerks as the most frequent being observed in 26 cases. Next comes the Argyll Robertson symptom in 23 cases: Romberg symptoms and ataxia, in general, were observed in 15 cases only, but in some instances data could not be obtained because the disability of knee or ankle was such as to make standing impossible. Lancinating pain was noted in 9 cases; girdle pain and gastric crises, in 4 cases; and other sensory disturbances, in 3 cases.

The interval between the primary infection and the first appearance of tabes varied between a few years and twenty-eight years. An apparently definite traumatic onset of the arthro-

pathy was observed in 17 out of 40 cases. Most of the tabetic knees and ankles, however, appear to have a traumatic collapse under body weight or other strain at some time or other. A definite, pathological, spontaneous fracture was observed in 2 cases of Charcot knee with separation of epiphysis and fragmentation of the spine of the tibia. Massive collapse was most often noticed in tabetic ankles and mid-tarsal joints. In 2 cases of arthropathy of the hip a pathological dislocation was observed. A sudden onset of non-traumatic type was observed in 3 cases of arthropathy.

Pain in the joint, an unusual symptom in arthropathic conditions, was noted in 11 cases out of 40. There were two interesting cases of complication with osteomyelitis, both involving the ankle. The pain was less severe than would be expected, and the reaction of the joint much more torpid than in normal joint. One of the joints was drained and treated conservatively, and the other came to amputation because of extensive destruction. Intermittent swelling under stress or weight-bearing was observed in 12 cases.

The Wassermann reaction was positive either at the time of first observation or some time during the treatment in 21 out of 30 cases in which the test was obtained.

The *x*-ray findings were typical of Charcot joints in all cases. They showed extensive bone destruction and bone proliferation with adaptation of the new-formed bone to function. Bone destruction was especially in evidence in knees and ankles, and less extensive in the spine and elbow. In the case of the pathological dislocation of the hip joint there was extensive destruction of both the head and the acetabulum with moderate amount of new formation.

*Treatment.*—Antiluetic treatment was administered in all cases of positive Wassermann reaction.

The orthopedic treatment was largely conservative and consisted in application of plaster jackets or leather torsos for the tabetic spines, and of braces for knees, ankles, elbows, and hip. The apparatus for the lower extremity being designed to restrict motion and to afford sufficient stabilization of the affected joint.

Upon the application of immobilizing braces or apparatus, the patient showed improvement in symptoms, although the condition did not change and the progress was not materially halted. The best relief obtained in arthropathic spine was by the application of plaster jackets or torsos. In the knee, a long leg caliper brace,

with limited action, produced, as a rule, a weight-bearing limb and effectively prevented lateral deviation.

Of the 40 cases 31 were treated, 25 of these conservatively alone, and 6 had operations in addition. Amputation below the knee, for extensive destruction of the ankle, was performed in 2 cases, and an artificial limb was applied in one, the other died of septic infection. A synovectomy of the arthropathic knee, because of extensive synovial and articular proliferation, with formation of free bodies, was done in one case, but the end-result could not be ascertained. A resection of the arthropathic knee joint was carried out in 3 cases: of these, 2 became solidly fused; in 1 the fusion was incomplete but useful.

The indication for fusion was lateral instability of the joint, and the cases selected were those in which the destruction of the articular body had not become extreme, so that one might expect good adaptability after resection and sufficient osteogenetic power for subsequent fusion.

#### SUMMARY AND COMMENT

A review of this material shows that while there are typical syndromes of the arthropathic joint, there are also numerous exceptions which complicate early diagnosis:

1. In a relatively high percentage of cases the tabetic joint is the first symptom of tabes.
2. The Wassermann was found negative in one-third of the cases.
3. Complications with osteomyelitis or osteoarthritis occasionally occur, clouding the clinical picture and complicating the diagnosis.
4. Periodic effusions in the joints, especially in the knee, are not uncommon in response to traumatism or strain.
5. Pain in tabetic joints, although modified by the disturbance of deep sensation, is not uncommon, being observed in 25 per cent of the cases.
6. An apparently sudden traumatic onset signifying a sudden break-down of the already pathologically changed joint constituents, is so common that it must be included in the typical syndromes. We found it in 17 out of 40 cases.
7. Conservative treatment is entirely symptomatic and is based upon the assumption that no osteogenesis is to be expected from these joints to a degree which would justify operative fixation; it is the treatment generally adopted.
8. Our operative experiences of knee joints, as well as that of others, seem to show that in cases not too far advanced in disintegration, a sufficient amount of osteogenesis is present to warrant operative fusion.

### "SPEAKING OF OPERATIONS"\*

BY CHAMBERS KELLAR

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LEAD, SOUTH DAKOTA

Hippocrates, the Father of Medicine, lived in the 5th Century, B. C. It might be said that the inspiration of modern surgery is Hippocrates' aphorism: "Where medicine will not cure, incision must be made." It is barely possible, however, that this was intended as a warning against over-prompt operation, and an endorsement of the less heroic methods of the physician. Certain it is that from very early times the surgeon has been an object of mixed veneration and fear.

Probably the first authentic recognition by law of the rights and liabilities of the surgeon is to be found in the Code of Hammurabi, King of Ancient Babylonia. This Code is assigned to the year 2,600 B.C., antedating the Mosaic Law by 1,500 years. The Hammurabi Code, Section 215, fixes the fees of doctors (probably the first

price fixing precedent). Section 218 provides:

If the doctor has treated a gentleman for a severe wound with a lancet of bronze and has caused the gentleman to die, or has opened an abscess of the eye for a gentleman with the bronze lancet and has caused the loss of the gentleman's eye, one shall cut off his hands. (Vol. 1, Library of Original Sources, p. 457.)

A bit drastic and calculated to develop in the profession a wholesome regard for palliative remedies and a horror of the knife akin to that of his patient's. The surgeon's standing has improved somewhat in the past 4,500 years. He no longer stands to lose both hands, but he still faces the jury's divine guess at compensating damages and the loss of prestige.

Logically connected with such liability for unsuccessful operations is that arising from successful operations unlawfully performed. In

\*Presented before the Black Hills Medical Society, January 11, 1927.



short, from unauthorized operations.

Anglo-Saxon law has ever been jealous in guarding the personal rights of the individual; and thus it is that any, even the slightest, unlawful touching of one's person constitutes assault and battery, subjecting the offender to both civil and criminal liability.

These principles are so obvious and elementary that many surgeons fail to appreciate their importance. Every surgeon knows that consent of the patient is necessary to justify an operation, and no reputable surgeon will operate without such consent. And yet reputable surgeons have been sued—and sued successfully—for operating without such consent! Why? The answer is to be found in the hazy view of physicians as to what, under varying circumstances, constitutes legal consent.

As late as 1907 the case note to *Pratt vs. Davis*, decided by the Supreme Court of Illinois in December, 1906, states that: "*The question of the liability of a surgeon for performing an operation on a patient without consent is practically new.*" (7 L.R.A. (N.S.) 609). And in England, as late as 1906, the question had been before the courts only once. In the year 1907, the case note to *Bakker vs. Welsh*, decided by the Supreme Court of Michigan in July, 1906, states: "The case of *Bakker vs. Welsh* is the *only one* in which the question whether the parent's consent is necessary to authorize an operation on a minor has been actually passed upon!" (7 L.R.A. (N.S.) 612.)

The paucity of litigation involving such questions is greatly to the credit of the medical profession. Since then, however, the more frequent occurrence of such cases indicates either a lack of caution on the part of physicians or a keener appreciation by lawyers of the possibilities of an unexploited field!

Notwithstanding the general rule that consent of the patient is essential to warrant an operation, there are circumstances or conditions which in effect constitute exceptions to the rule. Stated broadly these are:

First: Emergency cases; and

Second: Cases of infancy and persons non compos.

And even as to these apparent exceptions, the courts invoke the theory of implied consent in the one case, and consent through delegated authority in the other.

The rights of the individual are thus stated by the law text writers:

Every person has a right to complete immunity of his person from physical interference of others,

except in so far as contact may be necessary under the general doctrine of privilege; and any unlawful or unauthorized touching of the person of another, except in the spirit of pleasantry, constitutes an assault and battery. (Vol. 1, *Jaggard on Torts*, p. 437.)

And the general rule on the subject under discussion is thus stated (Vol. 1, *Kinkead on Torts*, Sec. 375):

The patient must be the final arbiter as to whether he shall take his chances with the operation or take his chances of living without it. Such is the natural right of the individual which the law recognizes as a legal one. Consent therefore of an individual must be either expressly or impliedly given before a surgeon may have the right to operate.

#### *Emergency Cases.—*

What then are the conditions or circumstances which create that emergency which in law obviates the necessity of consent, and upon what theory do the courts proceed in protecting the surgeon? The rule is thus stated:

Where an emergency arises calling for immediate action for the preservation of the life or health of the patient, and it is impracticable to obtain his consent, or the consent of any one authorized to speak for him, it is the duty of the surgeon to perform such operation as good surgery demands, without such consent. (30 Cyc. 1577.)

Emergency operations without the patient's consent may also be justified by reason of the liability for failure to operate under such conditions. As stated by the Minnesota Court (*Staloch vs. Holm*, 111 N.W., 264; 9 L.R.A. (N.S.), 715):

Physicians in the nature of things are sought for and must act in emergencies, and if a surgeon waits too long before undertaking a necessary amputation, he must be held to have known the probable consequences of such delay, and may be held liable for the resulting damage.

The surgeon thus finds himself confronted by the Scylla of operating when he ought not, and the Charybdis of not operating when he ought. We have here one of the clearest illustrations of the divine principle of "damned if I do and damned if I don't."

The Supreme Court of Michigan, in the case of *Luka vs. Lowrie*, decided in 1912 (136 N.W., 1106; 41 L.R.A. (N.S.) 290) considered the question of emergency operations. As the patient was a boy of fifteen the necessity of the parents' consent was at issue. In passing, it is interesting to observe that the note to this case in 41 L.R.A. published in 1913, states that the only other case in point is that of *Bakker vs. Welsh*, also a Michigan case (108 N.W. 91.)

In the *Luka* case a fifteen year old boy had

his foot crushed in a railroad accident. He was removed to a hospital and was able to give his name and address to the attending physicians, but thereupon lapsed into unconsciousness. Efforts to revive him by strychnine and saline solutions were abortive. Five surgeons, including the defendant, who was assistant surgeon of the Michigan Central Railroad, agreed that an immediate operation was necessary to save the boy's life, and it was thereupon performed. The boy recovered and brought suit for damages upon two grounds: first, that the operation was unnecessary; and, second, that it was performed without the father's consent. The trial court directed a verdict for the defendant, which the Supreme Court affirmed. Three physicians testified for the plaintiff that the operation was not necessary—in short, that it was *not* an emergency case. It will pay every surgeon to spend twenty minutes in reading the complete report of the case as the court quotes freely from the testimony of plaintiff's experts. Aside from certain general principles of law enunciated, emphasis is placed upon the fact that the defendant did not operate upon his sole judgment, but called into consultation several other competent surgeons, from which it may be said that in *all* cases where consent cannot be obtained the safe course is to insist upon consultation wherever practicable before operating. The Michigan Supreme Court said:

While they (the plaintiff's witnesses) disagree upon some details, they apparently all agree that the proper course for a surgeon to pursue when confronted by such an exigency is to consult with another or others and then exercise the best judgment and skill of which he is capable.

Here the four house physicians and the operating surgeon agreed that the boy's parents resided at such a distance from the hospital that his life would be endangered by the delay necessary to communicate with them. And the court in view of the surrounding circumstances said:

The surgeon had the right to act in the emergency upon the theory that to obtain consent was impracticable. In such event the surgeon may lawfully and it is his duty to perform such operation as good surgery demands without such consent.

The following interesting observations are then indulged in by the court:

The fact that surgeons are called upon daily, in all our large cities, to operate instantly in emergency cases in order that life may be preserved, should be considered. Many small children are injured upon the streets. To hold that a surgeon must wait until perhaps he may be able to secure the consent of the parents before giving to the injured one the benefit of his skill would, we believe,

result in the loss of many lives which might otherwise be saved.

It is not to be presumed that competent surgeons will wantonly operate, nor that they will fail to obtain the consent of the parents where such consent may be reasonably obtained in view of the exigency. Their work is highly humane, and very largely charitable in character, and no rule should be announced which would tend in the slightest degree to deprive sufferers of the benefit of their services.

The emergency theory as obviating the necessity for express consent has also been extended to those cases where a surgeon performing an authorized operation discovers an unexpected condition which, if not promptly remedied by a different or additional operation, will threaten the life or seriously impair the health of the patient. Under such circumstances courts have upheld the surgeon's right to operate as by implied consent<sup>1</sup>.

1. 30 Cyc. 1577.

Mohr vs. Williams (Minn.) 104 N. W. 12; 1 L.R.A. (N.S.) 439.

King vs. Carney, 204 Pac. 270; 26 A. L. R. 1032.

Bennan vs. Parsonnet, 83 Atl. 948 (N.J.)

In the case of *Mohr vs. Williams*, the court recognizes the rule as above stated, but holds it not to be applicable to the facts there involved because no emergency in fact existed.

The opinion in the *Bennan* case is especially interesting because the New Jersey court advocates a modification of the common law because of the changed conditions surrounding major operations due to the use of anesthetics. The court said in part:

Without stopping to point out the fallaciousness of the premise that a surgical operation can be contracted for or performed according to plans and specifications, it is enough to say that the entire foundation of the supposed analogy is swept away by the surgical employment of anesthesia which renders the patient unable to consent at the very time that the rule of the common law required that his consent be obtained; for in those days the patient (such was the horror of it) was a conscious participant in such surgical operations as were then performed, and as his consent could be obtained the rule of the common law was that it must be obtained.

To meet these changed conditions, the rule of law, must in the interest alike of patient and surgeon, be adapted to the changes that have been so wrought, chief among which is the unconscious state of the patient at a time when by the common law rule his consent must be obtained.

The court then advances the theory that when the patient has no one else present authorized to represent him the operating surgeon has impliedly such delegated authority, and may, if in his judgment the situation demands it, perform a different operation than that consented to by the patient.



An all sufficient answer to the court's argument is that both surgeon and patient are equally cognizant of the changed conditions created by anesthetics, and if *carte blanche* is to be given the surgeon, it can be given by written authority of the patient before the anesthetic is administered. The discovery of anesthetics has not changed the law of the inviolability of one's person. If the patient prefers to live five years with two legs, rather than twenty years with one, that is his privilege. Fortunately the very interesting discussion by the New Jersey court is largely obiter dicta, as the record showed an emergency situation which under existing recognized principles justified the operation. This opinion is not likely to become a precedent.

That a physician performing a different operation than that authorized (except in emergency situations) must respond in damages, is undoubtedly the law at present<sup>1</sup>.

In the Mohr case the surgeon was held liable in damages for operating on the right ear when the patient had authorized an operation only on the left ear, although it was discovered after the anesthetic had been administered that the right ear was badly infected and that an operation was needed.

In Rolater vs. Strain liability was held to result from the removal of a bone in the foot, where the authorized operation was to make an incision in the foot and drain the toe joint.

The truth is that the law in this particular is not so clear as it should be. The courts at times have been a bit rambling and halting in their opinions. The safe, and the only safe, course for the surgeon is to operate only as authorized, save in cases of undoubted emergency.

Notwithstanding the New Jersey court's vivid portrayal of the changed relationship between patient and surgeon wrought by the use of anesthetics and the severe strictures of that court upon the theory that an operation must be conducted pursuant to contract and according to plans and specifications, nevertheless as a matter of fact the right to operate and the scope of such right are bottomed upon contract. A careful review of the decision clearly shows this. Indeed, in no other manner (emergency situations excepted) can the individual's right to inviolability

of person be surrendered.

#### *Operations on Minors.—*

An operation upon a minor, except in emergency, cannot be lawfully performed except by consent of the parents or other lawful guardian.<sup>1</sup>

The father is the natural guardian of the minor child, and his consent is necessary and sufficient. In South Dakota, however, the Legislature, in 1921, enacted a law providing that:

The father and mother of a legitimate unmarried minor child are equally entitled to its custody, services and earnings.

Similar statutes doubtless have been enacted in other states. The interesting query suggests itself, whether under such a statute the consent of the father alone is sufficient to authorize the operation. On principle it would seem that the joint consent of both parents is essential. At all events, no cautious surgeon will proceed in such jurisdictions without the consent of both parents where it is practicable to secure it.

#### *Operation upon Wife.—*

Notwithstanding the statement of a text-book of repute (30 Cyc. 1577) that "whether or not the consent of the husband to the performance of an operation upon a married woman is necessary is not well settled"—such is not the case. The law is, as it should be, quite well settled that the husband cannot by his refusal deny to the wife the benefit of a needed operation, nor by such consent authorize an operation to which she does not herself consent. Some hundreds of years ago under the common law the contrary may have been true. But in the slang parlance of the present "them days is gone forever<sup>2</sup>."

A résumé of the questions discussed and the conclusions reached is:

1. Consent of the patient except in cases of emergency is essential.
2. Consent for operation upon a minor child must be given by the father, save in those states which have statutes giving equally to both parents the custody, services and earnings of the child, in which the consent of both parents should be secured.
3. The consent of the husband to an operation upon the wife is not necessary.
4. The surgeon may only perform the operation authorized by the patient, and performs any other at his peril. But
5. An emergency may arise in the course of

1. 30 Cyc. 1577.  
26 A. L. R. 1036.  
Mohr vs. Williams (Minn.) 104 N. W. 112; 1 L.R.A. (N.S.) 439.  
Rolater vs. Strain, 137 Pac. 96 (Okla.); 50 L.R.A. (N.S.) 880.  
Hobbs vs. Kizer, 236 Fed. 681.  
Wells vs. Van Nort, 125 N.E. 910 (Ohio).  
Robinson vs. Crotwell, 57 So. 23 (Ala.)  
Pratt vs. Davis, 79 N.E. 562 (Ill.); 7 L.R.A. (N.S.) 609.  
Zoterell vs. Repp, 153 N.W. 692 (Mich.)

1. Ann. Cas. 1916 C., p. 1107.  
Rishworth vs. Moss, 159 S.W. 122 (Tex.)  
Moss vs. Rishworth, 222 S.W. 225 (Tex.)  
Luka vs. Lowrie, 136 N.W. 1106 (Mich.); 41 L.R.A. (N.S.) 290.  
111 S.E. 492 (W. Va.)  
Routt vs. Ready, 265 Fed. 455.  
2. 4 A.L.R. 1531.

the authorized operation, due to unexpected conditions and complications, which will justify an additional or different operation than that authorized.

6. By emergency is meant a condition which unless immediately corrected by operation will seriously endanger the life or impair the health of the patient.

7. Never perform an operation without the written consent of the patient where procurable.

8. Never perform an emergency operation without the approval of consulting physicians when possible to obtain it.

9. Stop practicing medicine where you get sued, and practice law where you do the suing!

## MEDICAL CHARITIES\*

By C. R. CHRISTENSON, M.D.

STARBUCK, MINNESOTA

The selection of this caption is in response to conditions that have arisen within the medical profession chiefly during the last decade and is a topic of constant and serious discussions wherever medical men foregather. Like the charity of Holy Writ, it covers a multitude of sins. These have been viewed by them with increasing alarm but, in the words of Mark Twain regarding the weather, "Everybody is finding fault with it, but nobody seems to be doing anything about it."

Applying the broadest interpretation to the term, it includes the entire scope of medical practice under existing present conditions. Any young man or woman who is willing to sacrifice seven years after leaving high school in medical training, costing them from six to ten thousand dollars and a further investment of from two to five thousand dollars for the average equipment, can be actuated by nothing but the most charitable motives and for purely humanitarian considerations. If he should be contemplating a location in the rural districts, he is confronted by the grim specter of intellectual and professional suicide; the twenty-four hour service as a bell-hop or all-round chore boy; the mail order house standard of fees with extended credit; the paucity or usual absence of trained assistants, consultants, and technical facilities; the increasing encroachment of irregulars of all types who are free to foist their fads on the uninformed and gullible masses. Add to this the adoption of the local prevailing social, religious, and political standards, and you have the retrograde metamorphosis from the butterfly to the larval stage.

On the other hand, should he select a large city for his activities as general practitioner, the initial investment would be less, as such acces-

sories as *x*-ray and laboratory facilities are available. But should he choose to become a specialist, or pseudo-specialist, as about 80 per cent of our recent graduates elect, his equipment would require considerable more. He will contend with about the same proportion of baroque cults, but in addition he must struggle against the progressive invasion into his field of free clinics and dispensaries, welfare homes, settlement and neighborhood houses and the hundreds of charitable agencies with their corps of social nurses, school nurses, and welfare workers of all creeds and colors. He would further be called upon to donate his time, talent, and energy to these institutions in addition to contributing financially to community chests and "Have a Heart" drives.

Whether at cross roads or in village, in metropolis or capital, the universality of forces inimical to the legitimate and efficient functioning of the medical sciences is obviously patent to any intelligent observer. A number of these forces have developed within the profession itself from the evolutionary complexity of modern increase in biological knowledge; the *increase* in cost, time, and requirements of a medical education, and a *decrease* in the number of medical schools of almost 60 per cent in the last twenty years; also the disproportionate increase in specialists.

Of the external factors menacing the integrity of our profession the most ominous is socialization and State public service, which extends into every urban and rural nook and cranny with yearly legislative additions, both Federal and State. The profession is equally hampered by moron legislators, who are attempting to regulate every human activity, from the setting of a hen to the burial of a dead horse. Years ago the domain of public health was limited to vaccination and control of communicable diseases. To-day it cares for teeth, eyes, ears and throats

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of school children; it carries on a warfare against tuberculosis; establishes centers for venereal diseases, and other centers for the care and feeding of infants; opens centers for cardiac cases, cancer, and diabetes; establishes war veterans bureaus. With all these public-health institutions goes a corps of field workers, nurses, clinicians, surgeons, pathologists, epidemiologists, radiologists, etc.

At a meeting of the Ramsey County Medical Society in April, 1926, a resolution was introduced and adopted that the President appoint a committee of five to make a study of methods employed in charity organizations in St. Paul and Ramsey County. A questionnaire was mailed to the 325 members. Of these only 113 were returned, but the answers shed much needed light on many pernicious practices. A copy of this report should be in the hands of and studied by all interested progressive physicians.

Time does not permit further details of this investigation except to state that the value of these free medical services, expressed in dollars and cents, when prorated among the 300 physicians in St. Paul, would amount to about \$5,000 each, a sum greater than the net income of medical men.

The greatest field for medical charities at present is the rural service. The cold, merciless facts and statistics indicate a rapidly decreasing supply of physicians in these districts. I will give a few abstracts from an article by William Allen Pusey in the June number of *The American Mercury*.

"Of 940 towns of 1,000 or less in 47 states, 20 average towns in each state, which had physicians in 1914, only 630 of them had physicians in 1925; 310 of these towns are now without physicians. Thus, almost one-third of the small towns of the country have lost their physicians in eleven years.

"These findings indicate a rapid and dangerous disappearance of country doctors. The most significant fact is the high average age of rural physicians,—52 years. The average at death of American physicians is 62 years. This means that if present conditions are not remedied there will be a breakdown of rural medical service in 1935. The doctors upon whom the rural districts are chiefly dependent for medical services are a group of old men, with nobody in sight to take their places.

"Equally disconcerting is the fact that only an average of 1.4 per cent of the doctors graduated during the last ten years have gone into

the rural sections of the United States. If this same rate should continue for the next ten years, and if none of the younger doctors who are now in the country should die, quit, or remove, the total number of graduates since 1915, in these counties, in 1935, will be 2.8 a county, and there will be practically none of the older generation left. There are now 15.5 doctors a county in these rural counties. Two and eight-tenths doctors a county cannot furnish adequate medical service. Actually in my investigation of 383 counties there were 100 counties (39 per cent) which did not have a single physician who had taken his degree during the last ten years. These counties are now face to face with a complete breakdown of medical service."

Another problem within the scope of this paper is the economic factor as regards both the patient and the doctor. Education, with its increased cost to the doctor, has brought a proportionate increase in medical services to the patient. Where formerly medical schools educated men to become general practitioners and family doctors to cope with 90 per cent of the ills of humanity, now, due to research and evolution in the medical science, there are included biology, chemistry, electricity, bacteriology, x-ray, physio-mechano-therapy and all other allied and related sciences to such an extent that specialization has increased disproportionately to its needs. It being estimated that the specialist is needed in only about 10 per cent of cases of illness, yet about 80 per cent of our recent graduates are specializing to take care of this 10 per cent, leaving 20 per cent to take care of the 90 per cent. Pathetic, isn't it?

This condition must necessarily create financial havoc with both patient and doctor. Even though charges be fair, yet the total pyramiding would be formidable and practically prohibitive to 75 per cent of our sick population who must be treated by practitioners of limited skill, slight special knowledge and equipped with meager technical appliances.

The following figures are obvious: "Thus the cost of a compound fracture has been known to amount to \$937. A hernia may come as high as \$723. A gall-bladder operation often requires \$274. Even a spell of really good quality pneumonia can seldom be had lower than \$200. A wife taken ill of cancer on January 1 of a certain year and dying Easter day was found by her husband to have required \$6,000 worth of medical attention. Though his salary was \$10,000 annually, his savings were obliterated. Such things would not occur in a well-regulated

society. The minimum charge for a maternity case handled by a general practitioner in New York City is \$150. In case a specialist is required or desired, the charge amounts to from \$400 to \$500."

In collecting material for this paper the writer accumulated an enormous amount from many various sources. To record these would fill many heavy tomes and exhaust the available pulp supply at the nearby Sartell Mill. It is therefore more expedient to mention a few points briefly than to consume time in effervescent prolixity.

The time has passed when one can refer sentimentally to the *art* of medicine. It has assumed the dignity of an exact *science* and should be qualified as a *business*. Consequently we should have a revision of our antiquated code of ethics, standards, and traditions in order to meet modern conditions. We urgently need readjustments. To mention only one, publicity-education and enlightenment of the public in causation, prevention, and cure of bodily derangements. Not by individual proclaim, but give them facts in the name of medical science.

We must face the sad fact that from ancient times our profession has been unpopular with the masses. Leaving out the downright persecution of our colleagues in the past we are still subject to public opposition and even open hostility of legislators who will reflect the sentiment of their constituents. Our last Legislature was no outstanding exception.

There are other questions which directly concern this Society, which is composed so largely of rural practitioners. How are we to meet the depletion of doctors in our territory? What is the eventual solution if left to follow the present trend? Taking every factor into consideration, weighing all evidence and opinions there seems but one answer, viz: socialization or some modification of that system and State medicine. Appended are a few extracts from both the medical and lay press. "The field of the private office is being more and more encroached upon. . . . The public is awakening to the realization that the great problems of preventive medicine can be solved only by the State, using the individual physician as its officer, its agent, its employee. And, furthermore, the public is learning that in order to fight and vanquish disease you require a great number of well-equipped

research laboratories, you need the combined efforts of radiologist, diagnostician, clinician, surgeon, and trained nurse. You need teamwork and competent supervision. All these essentials can be secured, not in the office of the average, competitive, private practitioner, struggling against odds for a livelihood, but in the modern, efficient, thoroughly equipped hospital and clinic. That is the natural outgrowth of industrial, mechanical, and scientific advancement. . . . The hospital and clinic must be transferred from the realm of charity and placed under the control and support of the community. . . . Why not make the community pay for your services in decent salaries rather than try to take it out of the rapidly dwindling clientele? . . . Will such a plan entail material sacrifices on the part of the medical profession? . . . Recently I received a confidential report of a physician's loan society and was appalled at the number of needy doctors who, after many years of active and faithful practice, found it necessary to apply for loans in order to tide them over financial difficulties. . . .

"Another report gives startling figures for the number of applicants to a home for aged physicians. The average income of the average physician is hardly anything to boast of. He surely does not shine in the income tax reports. He would be far better off with a regular and assured income, with the chance of promotion after certain periods of service and with a comfortable pension on retirement."

The above is contrary to the independent efficiency and initiative in private practice so viewed by the profession and the writer. May he suggest a more logical and practical plan as a tentative measure? Why not revert to the status quo of ancient medicine in the hands of the priesthood? Tell the people that we have a "divinely certified calling"—a religious cult—, that they should build us hospitals and clinics where we could perform our sacred duties; provide homes for us, pay us substantial salaries, reimburse us for supplementary services, and delight us with frequent donations and offerings.

Gentlemen, these topics are presented for your intelligent consideration and discussion.

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## THE IMMEDIATE CARE OF EYE INJURIES\*

BY DAVID V. MEIKLEJOHN, M.D.

FOND DU LAC, WISCONSIN

The object of this paper is to discuss, in as clear and concise a manner as possible, the early treatment of eye injuries, with particular reference to those from industrial plants.

To afford the patient the greatest help and relief it is of paramount importance that the initial treatment be given with the utmost care and caution. While the removal of an eyeball is a comparatively easy and harmless operation, yet great care is given to its preparation and asepsis, and, as a result, prompt and uneventful recovery is usually made. Contrast with this the preparation for the removal of a foreign body embedded in the cornea. Is it not true that very often an instrument which may have been used for other purposes is taken from the shelf, not even immersed in alcohol, and used immediately in the operation? And yet, this is one of the most important operations which we perform. It seems only fair that the public be given the most scientific and careful attention possible.

Injuries to the eye may be classified as penetrating, non-penetrating, and contusions. Every penetrating injury, regardless of its location, is to be looked upon as intrinsically serious, as a coincident infection is apt to result. In all injuries where the conjunctiva is torn or lacerated, the possibility of an intra-ocular foreign body should be considered. The site of perforation is often overlooked, particularly in the presence of extravasated blood.

Extraction of magnetic intra-ocular foreign bodies should be done as early as possible, and as their removal requires a high degree of surgical skill and judgment, none but those skilled in that work should attempt it, as many eyes are lost through unwise and unskillful operations.

Of the non-penetrating injuries, the vast majority are foreign bodies embedded in the superficial layer of the cornea. As we would expect, the interpalpebral area is the most sensitive, as well as the most important, part of the cornea. It also has the least protection and naturally suffers the most from such injuries.

Most frequently observed are small particles of metal or emery which fly from the hammer or wheels, being heated and thrown out as sparks, then lodging on the bulbar conjunctiva.

Much more infrequent and serious are those cases in which the foreign body has penetrated into the deeper layers of the cornea. In either case these bodies should be removed as soon as possible. If not removed early, an inflammatory infiltration forms around it, assuming a gray ring; a resulting ulcer may then form and in healing leave a small opacity, which, if in the pupillary space, interferes greatly with vision. In many cases the process of healing takes place with marked symptoms of irritation or even an iritis. These symptoms may be present for several days after the foreign body has been removed.

In the removal of these particles the very best illumination is needed, and a magnifying glass or loupe is of the greatest assistance. A local anesthetic should always be used, as it is nearly impossible for a patient to keep the eye quiet without one, and in moving the eyeball an abrasion of the conjunctiva may result, which would not have happened had an anesthetic been used. I am using butyn, 2 per cent, for all of these cases. I do not know that it is any better than cocain, except that it does not dilate the pupil, which so many patients complain of. I fully realize that dilatation of the pupil is needed in some cases, but, if so, I would much prefer the use of atropin, informing the patient of its use.

Too much care cannot be given to the removal of these bodies. First, the patient should be told that he is not going to be hurt. Then try to get him to look in the proper direction, so that you may have the iris for a background for your work. Instruct him to keep *both* eyes open, for, if you do not, he will probably squint or partially close the eye that you wish open. The eye spud or pointed instrument should be carried toward the cornea at a right angle to it, so that the point of the instrument can be pushed beside and under the foreign body and thus raise it from its bed.

Too many times we see patients where a large area of the bulbar conjunctiva has been scraped away in the endeavor to dislodge the particle, something which could not have happened had the point of the instrument been used. These abrasions oftentimes give us more trouble in healing than does the primary injury. I believe

\*Presented before the Seventeenth Annual Meeting of the Minneapolis, St. Paul & Sault Ste. Marie Railway Surgical Association, at Chicago, Illinois.

that in all cases where the particle has penetrated the deeper layers of the cornea that atropin should be instilled and a bandage or pad applied.

There was a time when after removal of these bodies I dismissed the patient without any protection or medication, and seldom was any after-attention needed. But occasionally a patient would return with a resulting iritis, due to delayed healing and infection, which would not have resulted had I used the above precaution.

In the superficially embedded bodies, which may be removed with a cotton-covered instrument, the patient should make prompt recovery, without having the eye covered. I realize that many are advising bandage in all cases, but pads are often a great handicap for the patient, especially in some occupations where it is impossible to work with one eye bandaged. In such cases I am not covering the eye, but am instructing the patient to report if there develops any irritation or photophobia.

Where corneal ulcers do result, besides maintaining full dilatation of the pupil, I endeavor to scrape away as much necrotic tissue as possible and use alcohol and Tr. of iodin. For the past two years I have used, instead, a prescription suggested, I believe, by Dr. Woodruff, which contains:

Zinc iodid .....	15 parts
Iodin (crystals) .....	25 parts
Glycerin .....	50 parts
Dist. water .....	10 parts

This can be applied with a small cotton swab, the excess fluid being expressed so as not to flow over the cornea. I then close the eye, first using a bichlorid ointment, 1-3,000.

#### DISCUSSION

DR. RICHARD C. SMITH (Superior, Wis.): Before the World War I had the good fortune to work with Dr. Meiklejohn in the clinics of Vienna and I know from that experience that everything he undertakes to do is done right and fair.

Our most frequent cases of foreign bodies in the eye are those of the cornea, because the cornea is exposed and foreign bodies are most apt to be found here. One of the first things we should do when we have a case of eye injury is to seat the patient on a range and record the visual acuity. The thing we are interested in is, What can that patient see? If these findings are recorded at the time of examination, we then have on file a record which prevents the patient from possibly simulating later on. We have him where we want him.

The first step, of course, is to remove the foreign body. And one of the very important things is to have good illumination. In many cases the cornea is injured by attempting to remove the foreign body without being able to see it distinctly. The method which we commonly employ in illuminating these

foreign bodies is by means of an ordinary electric light bulb which is glazed, using a magnifying glass, and we focus this light on the cornea and examine it. I have seen cases in which an attempt had been made to remove the foreign body from the cornea when in fact the particle was located under the upper lid, the object which the doctor had attempted to remove being a pigmented spot of the iris. In other words, the cornea is scraped and mutilated. If the operator had had good illumination he would have seen what he was doing, and this mistake would have been avoided.

Another important factor in removing foreign bodies from the eye is cleanliness. The thing we most fear in eye injuries is infection and subsequent ulceration. Why? Because following ulceration scar tissue develops, and if the foreign body is centrally located over the pupil, it requires only a very small scar to interfere with the vision, as the result of which we have a permanent disability. This could be avoided by using strict asepsis in connection with the instruments employed to remove the foreign body, thus preventing the introduction of infection into the eye.

Very often we have seen cases where pieces of emery have entered the eye, the emery has been removed, and at the point where the emery particles were located a brown ring is seen, and sometimes that brown ring is not removed. This ring is caused by an oxide of iron, a foreign substance, which must also be removed. If the ring is left nature removes it by a process of ulceration, and as a result of the ulcer scar tissue forms, and as I have before stated, the thing we must avoid is scar tissue in the cornea because it interferes with vision.

I would like to say something from the standpoint of the oculist and aurist. Since the Compensation Law has come into effect I should think examinations would be of great benefit to any industrial organization. I should think it would be of advantage to the Claim Department to know whether the man has a congenital amblyopia or not, or whether he has some diseased condition of the fundus or other structure of the eye; and I should think it would be of benefit to know whether that man had an otitis media or an otosclerosis. There is no question in my mind but that many alleged injuries are not due to injury, but to some pre-existing diseased condition, nevertheless they have in many instances been paid for by employing corporations. If we had a record of these people prior to the date of accident and knew the exact condition present, probably thousands of dollars could be saved to the corporations.

DR. JOHN H. RISHMILLER (Minneapolis, Minn.): In intracranial injuries the eye-grounds are very important, to determine whether or not intracranial pressure exists. For that reason it would be of great help for one to familiarize himself with the ophthalmoscope and be able to determine whether or not the eye-grounds are normal. This can be done only by practice, examining the eyes even if there exists no particular reason for doing so. The instillation of homatropin as a local therapeutic agent and atropin as a systemic agent will have some influence in differentiating an existing trouble with either eye. It is not unusual when one has a case of questionable brain injury with one large pupil



that one asks himself, Has a remedy for dilating the pupil been administered?

DR. JOHN STEELE BARNES (Milwaukee, Wis): There are fundamental rules in handling eye injuries, as in other surgical conditions. I seldom, if ever, use atropin after removal of a small foreign body in the cornea; yet I do not believe the essayist would have us infer that he uses atropin under all circumstances, because, in a large majority of the cases of superficial bodies lodged in the cornea, we never get any bad after-effects. But in injuries of the eye, as in other accidents requiring surgical skill, the sooner we can get the case into our hands the better, and the better will be the results obtained from treatment.

I have been in the habit of not using a pad, but I place a splint of adhesive in the shape of a half-moon on the lid, to keep the eye closed for perhaps twelve hours. We can then readily detect

whether any additional injury has taken place.

We should take the vision, not only of one eye, but of both eyes, and I go even farther. By the use of the ophthalmoscope I ascertain the condition of the media and of the eye-ground and make a record of it.

Another point: the ophthalmoscope with plus 7 or 8, will reveal the condition better than loupe or magnifying-glass, because with the ophthalmoscope we make no mistake as to whether we have a pigment spot of the iris or cornea or a real foreign body in the cornea. I had a case in which a doctor had attempted to remove a pigmented spot on the capsule of the lens with a giant-magnet. The case came in with a history of injury, and he thought the pigmented spot was a piece of steel that had gone through and lodged in the lens. So I believe that we should use an ophthalmoscope in these cases, and the record given by it will be complete.

## TULAREMIA: REPORT OF A CASE

BY CLIFFORD E. HENRY, M.D.

MINNEAPOLIS, MINNESOTA

Tularemia is being reported from all sections of the country and is no longer the rare disease it was a few years ago.

This patient, W. A. C., male, aged 50, was spending his vacation in the Northern part of Minnesota. On July 11 he noticed a sore just above the hair line in the left occiput and lymph nodes of posterior lymphatic chain easily palpable. He thought he had probably infected a mosquito or wood-tick bite by scratching. On the 13th he was fishing and got very wet. All that night there was severe aching through his body. The patient is a major in the Air Service and while in the Philippine Islands had two attacks of dengue fever. He said the general aching could be compared to only one thing, and that is dengue. The next morning all symptoms subsided, and he felt very well. From review of the literature this remission seems typical in the glandular type of disease. After a few hours the symptoms returned. On the morning of the 14th he vomited and had a temperature of 102°. The local physician told him he had what they called wood-tick fever, and he was due to be a very sick man. He incised over the original seat of infection and ordered hot bichloride packs.

The patient came to Minneapolis on July 21st, and I saw him on July 22d. He had the appearance of being a very sick man. My diagnosis was septicemia. The back of his neck was brawny and swollen, the lymph nodes were varied from the size of a filbert to English walnut, and the lymph vessels were easily palpable. Temperature, 100.5°; pulse, 96. He complained of a constricted feeling in his chest. The tongue was coated and the breath offensive. I ordered packs of a solution of magnesium sulphate to the neck, and calomel. The

white blood count next day was 20,000. On the 26th could make out an area of congestion in the base and apex of the left lung. On the 27th he had chills and dizziness, said he felt as if he was taking the "chair test" all the time. He was nauseated all the time and was coughing, complaining considerably of the whirling and nausea; bowels loose. On July 28th the w.b.c. was 14,400, r.b.c., 4,940,000; p.m.n., 85, lymphocytes, 15. A blood culture was made that later proved negative. On July 31st condition not changed except largest lymph node had become soft.

He was taken to St. Barnabas Hospital. Under local anesthesia the small ulcerated area in the occipital region was excised, and the large lymph node incised liberating fluid pus.

In the case reports reviewed it is the general consensus of opinion that it is better not to incise the enlarged lymph nodes until they break down. The pus and the excised ulcer were sent to the laboratory for identification of the organisms present, and were later sent to the University. Dr. Green was not sure of the identity of the organism, and he saw the patient in consultation. The next day 20 c.c. of blood were taken and the serum agglutinated the bacteria tularemiae in 1-300 dilution. The coughing, constricted feeling in the chest, nausea, and dizziness continued until August 12 when his temperature came to normal. The chest gradually cleared, and when he left the hospital on August 17, he was about normal. The wounds in the neck were closed.

The drug that seemed to give the most relief and controlled the symptoms best was quinine sulph. The wounds in the neck were dressed with a wick of iodoform gauze and a 2 per cent solution of mercurochrome.

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## THE AMERICAN HOSPITAL ASSOCIATION MEETING

The twenty-ninth annual convention of The American Hospital Association, held in Minneapolis, October 10th to 14th, registered some three thousand members and guests and carried in its train a small army of exhibitors.

From the viewpoint of the City of Minneapolis, the event was of especial interest as tending to test out the adaptability of the new Municipal Auditorium to large professional gatherings. As the forerunner of another and still greater convention of its type, that of The American Medical Association, coming to Minneapolis in 1928, the recent event has, for local medical committees lined up for the entertainment of their guests, some instructive lessons.

There are certain essentials of such professional gatherings:

1. A single large audience chamber in which the entire membership, if necessary, may meet.

The Minneapolis Auditorium has it, and a beautiful assembly room it is. Its beauty, at the late meeting, was enhanced by flag decorations, tastefully draping its galleries and its stage and according well with the simple outlines and rich coloring of its finish and furnishing.

The bigger the audience, within its full capacity of ten thousand five hundred, the better.

Contraction of its seating space is not desirable. It is emphatically a convention hall. It does not lend itself to the combination of assembly place and exposition which the American Hospital Association attempted to make of it. Nothing in its immediate neighborhood should be allowed to interfere with its acoustic properties. They are intrinsically perfect. The arrangement of its amplifiers has to be carefully studied with reference to their ideal placement in relation to an audience of given size.

Its stage arrangements may be readily adjusted to the use of individual speakers, of small groups of singers or players, or of large choruses. The stage seating may be placed on the floor or at suitable stair-case levels. The curtain-drops may bring the performer, speaker or reader at nearer or farther distance from his audience relatively to its size.

2. A number of smaller meeting-halls, of varying capacity, well adapted to the needs of participators in, or hearers of, special programs are equally essential.

The availability of such smaller audience halls is one of the stated merits of the Auditorium. Their location may be determined within the wide open spaces of the building. It is not, so far, fixed. Location, lighting, ventilation, arrangement as to size and form and fittings for these rooms are matters for expert direction.

The American Hospital Association made the mistake of planning its own uses of the space provided for it. The management of the Auditorium is not to blame if the conditions of success at this meeting were not fully achieved. The American Medical Association will not make the same mistake.

These meeting-rooms require, and they can have, excellent light and ventilation, comfortable seating, and effective projection apparatus. Fully equipped, they will match the models to be found anywhere.

3. Rooms, of relatively small size and suitably furnished, are necessary for committee meetings, round tables, and the like. The Auditorium is amply provided with them in convenient situations.

4. Adequate space is required for registration of members, information quarters, telephone, telegraph, and postal offices, and professional and scientific exhibits. Registration and information booths, postoffice and telegraph quarters must be accessible to the coming and going routes of travel, entry, and exit.

Exhibits should be grouped in some one part of the Auditorium which may be open to the



erection of booths. These are necessarily and always temporary accommodations. The spacious rooms chosen for them should be selected in the wide spaces of the building where they may be conveniently visited by members and guests, where they may be intelligently grouped and where they offer generous opportunity for inspection. Water-supply, gas, electric light and power should be available to exhibitor's booths. If outlets are suitably placed, booths can be built with necessary reference to them.

As a matter of recent experience it must be said, and the fact may be deplored, that the conventions of The American Hospital Association have apparently become mammoth expositions, in which professional programs are secondary and well-nigh subservient to the interests of the exhibitors. Hospitalities to guests, the entertainment of special groups, visits to neighboring hospitals and institutions, greatly promotive of hospital development, are systematically curtailed and discouraged in the fear that hours open to the observation of exhibits will be fore-shortened. It seemed, in this late meeting, almost as if the exhibitors had bought up the place of meeting.

Exhibits are attractive to visitors, and to professional visitors particularly, provided they are kept within scientific and technical lines, provided they are duly discriminative of merit, expertly endorsed, and provided they are not allowed to invade or to embarrass, by noise, debris, or dust the meeting-halls in which general or sectional programs are conducted. In their own place and sanely regulated, they are a valuable addition to a professional gathering.

Of course the scientific work of the Hospital Association suffered the effects of this policy. Meetings were not largely attended. Rarely did a session sit out its allotted hours. Members were principally in the exhibit booths, and naturally, when whole sessions were without, or with only one original paper. One major and one minor symposium, four brief round table discussions, twelve articles and two annual addresses represented the entire original output of the four days sessions of The American Hospital Association. Its Social Service Section, the Dietetic Section, the Outpatient Section, the Small Hospital Section, and the Nursing Section were, for brief periods only, on the crest of interest; although, even then, they were conspicuous for the absence of male members. Some thirty committee reports filled in most of the time of the sessions, and these, of the proverbially "dry as dust" variety, were per-

functorily disposed of.

Fortunately the Association is the foster-parent of a number of allied organizations. These are The Children's Hospital Association of America, The American Association of Hospital Social Workers, The National Dietetic Council, and The Occupational Therapy Association. Their meetings, coming concurrently with those of the parent body, presented programs of exceptionally live interest. From the printed transactions of their sessions, or from the reprints of their papers, hospital directorates, administrators, superintendents and staff-workers will gather impetus to advancement in hospital service.

Taking advantage of the sessions of The American Hospital Association and its allies, the State Nurses' Association, the State League of Nursing Education, and the State Organization for Public Health Nursing held their annual meetings in Minneapolis during convention week and added to the numbers visiting the city.

For these organizations interest centered in the discussion of "Hospital Group Nursing," by Sister Domatilla, of St. Mary's Hospital, Rochester; and "A Study of the Grading Problem," being a report of progress in the work of the Joint Committee on the Grading of Schools of Nursing, offered by its Director, Dr. May Ayres Burgess, who is making a notable contribution to the development of nursing education in America.

## THE RECURRING INFLUENZAL SITUATION

It is quite evident from the recent number of influenzal colds and other peculiar forms of communicable and infectious disorders that we are destined to have a continuance of the older influenzal period. It has been recently noted that the respiratory tract is the choice of attack. People have snuffling colds, sore throats, and infection of the tonsils and of the rest of the respiratory system. Fortunately, so far there have been comparatively few cases of pneumonia, but a number of so-called acute bronchitis cases, which, when carefully investigated, are found to be disturbances of the upper respiratory tracts. After a number of these attacks that patients begin to complain of pain over the frontal sinus, a stuffing of the nostril and edema and increased secretion in the nose and throat, which produce violent coughing spells, sometimes almost continual sneezing attacks, and occasionally a disturbance of the

digestive system. So-called stomach and intestinal influenza is still present although some of these cases which are ushered in by increase in temperature, nausea and vomiting with associated diarrhea are terminated within twenty-four to thirty-six hours, that is, these patients get over their attacks. And in a few instances it has been noted that the old-fashioned treatment of rest in bed for one or two days, a dose of castor oil, and a hot sweat is extremely useful.

But what is to protect the individual from a recurrence of these attacks? There are those who believe in the vaccine method, and a number of instances are reported in which two or three vaccinations have relieved the situation for variable periods of time—sometimes for a year, sometimes for a few weeks only, and occasionally for a few days only.

The patients seem to be subjects of persistent colds, due in part to their neglect of themselves, their failure to take care of themselves from a clothing point of view. They are careless about going into draughty places or into crowded halls where numbers of people are sneezing or coughing so that the air becomes contaminated with infectious particles. In the public schools the situation is really extremely embarrassing; pupils and teachers cough and sneeze throughout the entire school period, in spite of the fact that we are using modern methods of sanitation and the introduction of fresh air and a sufficient amount of out-of-door exercise and recreation. With all that there is something wrong in the care of ourselves. One man in writing about it went so far as to say that "colds are not infectious or contagious," and he tried in every way and finally proved this to his own satisfaction by taking watery discharge of the nose in a fresh cold and trying to infect himself or others with it. He found, much to his satisfaction, that he was unable to take cold in this manner. Dr. Rosenow, of Rochester, tried in the same way to cause influenza during the great epidemic period of 1918 and failed. So it still leaves us uncertain as to the various methods of contact. It seems reasonable to suppose that there are some instances where people who cough or sneeze in the face of another person manage to convey something to the individual that results in what we are pleased to call a cold. But behind it all, in all probability, is a physical condition which has been depreciated, and as a result the resistance of the individual has been much reduced and he or she contracts colds in some way.

In spite of the observation from some sources,

from some physicians, there seems to be no doubt that vaccine for influenza, a combined vaccine, has been of some service and it is quite evident that it does some good because the amount of vaccine that is prepared and used has greatly increased. And if used judiciously, with other remedies such as rest and quiet in bed, the writer thinks it is very helpful. Somehow he does not fear the introduction of these combination of bacterines, particularly that form of bacterial vaccine made from influenza (Pfeiffer), the pneumococcic types 1, 2, and 3, and the streptococcus hemolyticus; in fact, these vaccines, made up in this way, by reliable producers, are probably far less toxic than any of the things we breathe in the atmosphere,—the dirt, grime, and dust of the streets and sometimes of our own dwelling places, and certainly they are far less harmful than overheating, indifferently care of ourselves, and exposure to unnecessary draughts. This may sound old-fashioned, but it is considered by the writer more or less sensible.

#### PAYING DOCTOR AND HOSPITAL BILLS

This is quite a tender point with the profession and the hospitals at the present time, partly on account of the indifference of people to paying their bills in general. There seems to be a particular issue just now about the payment of doctors' bills and hospital bills—just why we do not know. Evidently the doctors are "easy-marks," or else it is due to the fact that there are so many other systems of healing in vogue and their members may be better business men than physicians are, that is, they probably get a payment at the first visit. That, of course, is so with all quacks; they know the credulity of the people, and they have a system whereby they demand payment of their bills in advance—and it is a very good system, too. We wish the doctors might do that, but they are ostensibly practicing medicine for the sole purpose of healing or helping the sick, and forget that they should be promptly and properly remunerated. Perhaps this is somewhat of an idle dream, but, if other people can do it and if the irregulars can do it, why cannot we? We cannot because we do not do our business as systematically as do business men. The man in the country cannot do it in some instances as well because he depends on deferred payments; and it is no uncommon thing now to hear of paying doctors' bills on the installment plan and this plan is apparently quite widely used. Clinics and the



individual men who are practicing medicine are sometimes obliged to accept their payments this way.

The habit of "beating" the doctor's bill is a very common one. The writer has recently had some experience with collection agencies, and so far as he can recall the smaller collection agencies do better work than those who are engaged in the work on an extensive basis; those who try to collect all over the country are more apt to fail than those who do it more conservatively and who consider the personal element. There are some doctors who have the right idea. They insist on the payment of their bills, and they have a way of suggesting to the individual or to the family the necessity of paying their bills because either the hospital or the physician is not able to continue the work unless it or he can pay their own bills. Sometimes the men from the country come in to the hospital with patients, and no definite arrangement is made with them beforehand because the case is practically an emergency case, and there are very few hospitals and very few doctors who will decline to care for the sick without sufficient guarantee that the bills will be paid. Some people pay their bills by check from the country, and they are frequently checks that are not worth the paper they are written on, with the result that the check is returned to the doctor or the hospital on the ground that there are not sufficient funds.

One case the writer recalls is that of a man in good circumstances, apparently, the manager of a big business. His wife was cared for by the hospital, and he gave a check for the services rendered which was promptly returned. No possible contact could be made with him, and the bill was finally turned in to a large collection agency and even they were absolutely unable to collect anything, although their methods were of the type which demands payment. The result is a loss to the doctor and the hospital. And if these losses were counted in dollars the sum would be an amazing one.

Part of this non-payment is due, as has been said, to the indifference of the people to meeting their obligations. Some of these people are renters. They pay a moderate sum or sometimes a large sum for a house, but they make no effort to save any money for future needs; they do not hesitate, however, to buy what they "choose." The women buy clothes, hosiery, and other things that are a matter of pride to them as they feel their personal appearance is improved, and they forget about the bills that are to come due. One instance was that of a man

and his wife who were both at work, and due to the hard times the wife lost her job. The result was that they had to give up the house and go home to their parents in the country. The man who owned the house made an inspection of the premises after they had moved out, and he found a large bag of stockings (women's stockings) which were not worn out but simply had some little wear or defect and which the careful, thrifty housewife would have put in order and worn again,—but not this woman. These are the same people who have an automobile, perhaps bought on the installment plan, and they take frequent trips out-of-town, weekend trips to a lake resort, starting on Saturday and coming back on Monday morning. They spend a good deal of money on these trips for food, for lodging, or for their tent equipment, for their gasoline and for other luxuries,—hence they pay out all of their excess earnings and leave nothing for their legitimate bills, which should be paid. It is from these people that the hospitals and the doctors suffer. These irresponsibles do not realize their extravagant ways of living and furthermore they do not care so long as they are having a good time and can enjoy themselves. Of course, this does not apply to all, but it applies to a large number of the non-paying patients. What is to be done about this; how can these bills be collected? The editor answers that after a long series of years in practice he does not know, for it is only occasionally that by sharp reminders, by insistent demands, that the bills are eventually paid. And not infrequently the debtor asks for a reduction in his bill and rather than let the whole thing go by default the amount is reduced; this usually causes a little friction between the doctor and his patient, and the patient is frequently known to go to another doctor and put the same thing over on him that was put over on the regular physician.

Perhaps the man in the country has the advantage. He knows the status of his patients. He knows when they have money and he proceeds to extract it. Not long ago a number of men in a district in Minnesota decided that they would take drastic measures, so they entered into a gentlemen's agreement that if patients defaulted in payment of their bill for a year they would not attend them, nor would any other doctor who knew of the co-operative method. In a newspaper editorial recently the editor commented on this condition by heading his editorial "Pay or Die." Yet in the course of the editorial he admitted that the doctors do a tremendous

amount of good; that they are perfectly willing and ready to give their services free to deserving patients. That is the universal custom, and it has become more universal since the advent of strenuous times. The result is that doctors are not only losing in their collections but losing in their business; yet they are open to criticism by the lay press if they refuse to attend a case. For instance, a man is called at eleven o'clock at night to attend an obstetric case, and usually these incidents often happen in midwinter. The man drives out in the country ten or twelve miles and finds that the woman has not been looked after before or the family are depending on a midwife to help them out, but at the last moment when the family got excited and anxious they sent for the doctor—and in many instances the confinement has been concluded before the doctor arrives; he stands very little show of collecting his fee for his effort to relieve a desperate or delicate situation.

It is about time the entire medical profession got a little different viewpoint of business methods and inquired, in the first place, into the status of the patients brought to them and their ability to pay their hospital bills or doctor bills. Even then people demand the services of a physician without any regard for the ultimate consequences or their inability to pay.

### SCHOOLS FOR LABORATORY TECHNICIANS

So-called schools for the training of laboratory and x-ray technicians and doctors' office assistants are springing up in the Twin Cities and elsewhere with amazing rapidity, some with amazing unfitness for the work of such training, and in others of them there is little or wholly insufficient clinical material for the students, and not a few of the pupils who are induced to pay the tuition (\$100.00 or more) are manifestly unprepared and unfit to do such work. Some of these schools are so bad that their acceptance of money under such circumstances is downright robbery.

We make these strong statements because of the deplorable results we have seen in the work of some of these schools, one of which in the Twin Cities has recently sent to its delinquent students threatening letters purporting to come from an agency composed of physicians with the apparant implication that reputable physicians are engaged in such work.

Girls who are thinking of taking such a course of training as suggested above should ask their

home physicians or some hospital for information about such schools, as well as about the present demand for girls so trained, and, incidentally, about the current wages paid to such help.

We are sure every physician will cheerfully answer any inquiries received by him from any source whatever; and the editor of THE JOURNAL-LANCET is glad to be able to say that its publisher will not accept pay from girls for the "want ads" they send to it until they have obtained positions through such advertising, and then the fee is merely nominal. This course is followed because of the small demand for such help.

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### THE DEDICATION OF THE CITIZENS' AID BUILDING OF MINNEAPOLIS

The medical profession, itself an agent of human welfare, is fitly interested in all the forces of social betterment. It should act always as their intelligent co-operator, as the earnest advocate of the principle of associative, co-ordinated, correlated effort in every field of health and welfare. For it is not alone by unity of aim and purpose,—an indispensable spiritual bond,—that effective interrelationships of social work are established. Personal contacts, the elbow-touchings of neighborly association, the interchanges of daily experience, the fellowship and the understanding of mutual ends tell upon the joint product of public service.

The Citizens' Aid Building of Minneapolis, dedicated on October 19, 1927, is the embodiment of this principle of "the get-together"; the gathering under one roof of the agencies of health restoration, preservation, and promotion; of family welfare and social uplift; of child study and guidance and parent education. It serves for an economy of overhead, for the consequent better use of available resources, for the saving of labor; but, beyond all this, it stands for a community of interest, a nice adjustment of relational activities, a sense of unity among workers and among those for whom they work.

The medical profession joins with the citizenry of Minneapolis at large in its warm recognition of the rare, uplifted vision that has put this broad conception of unified service into a home, beautiful of design, material, and color, within which those who work so continually, so devotedly for human betterment may the better serve, may hold up each other's hands, may in-



spire each other's lives to loftier endeavor, may help each other to the achievement of larger and more intelligent results.

The dedication, free from ceremonial and in full harmony with its purpose, suggested the lovely simplicity of the gift it was commemorating and the wealth of feeling that had worked itself out in every detail and appointment of the plan to so perfect form. Throughout it was significant of the power of all great, devoted, well-directed giving. And, beneath it all, there shone anew the beauty of holiness,—the holiness of beauty,—that enlightens every gift that encompasses the spirit of the giver.

—RICHARD OLDING BEARD.

## NEWS ITEMS

Dr. V. G. Morris has moved from Tioga, N. D., to Beach, N. D.

An addition to St. Elizabeth's Hospital of Wabasha is under consideration.

Dr. W. H. Young, of Baker, Mont., has decided to locate in Oakland, Calif.

Dr. E. J. Pengelly, of Crosby, was married last month to Miss Madeline Bagnell, of Proctor.

Dr. G. Biornstad, of Minneapolis, has returned from a three-months visit to the clinics of Europe.

A 30-bed hospital to be built at Columbia Heights by Dr. Troy S. Miller, of Minneapolis, is under consideration.

Dr. W. H. Valentine, of Tracy, has moved into his new office building, which gives him a suite of fourteen rooms.

Dr. W. E. Dickinson, of Canistota, S. D., has moved to Lincoln, Neb., and is on the staff of the Nebraska State Hospital.

Dr. W. M. Dodge, of Farmington, has begun an extended course in eye, ear, nose, and throat work in the University Hospital.

An extended notice of the American Hospital Association meeting in Minneapolis last month will be found in our editorial columns.

Dr. R. H. Beiswanger, a recent graduate of the Medical School of the U. of M., has joined the staff of the More Hospital at Eveleth.

Minneapolis has the second, and New York City has the first, workshop where tuberculous patients from tuberculous sanatoriums will be received.

It was announced in Minneapolis last month that the American and European Hospital Executives will hold a joint meeting in America in June, 1929.

Dr. M. W. Smith, a chiropractor of Huron, S. D., was elected coroner of Beadle County last month when the former coroner, an undertaker, resigned.

Dr. D. B. Rice, of Britton, S. D., is at the head of the association which is building a new hospital at that place. Work was begun on the building last month.

The new building for the Ramsey County's Children's Preventorium, at Lake Owasso, will be ready for occupancy this winter. It will cost about \$100,000.

The U. S. Veterans' Hospital at Fort Snelling treated nearly 1,500 patients during the six months it has been in operation. There are now 503 patients in this hospital.

A law in South Dakota restricting the sale of patent and proprietary medicine to registered pharmacists has been declared unconstitutional by the Supreme Court of that State.

Dr. G. L. Jacquot, of Tyler, will do post-graduate work in Chicago until January 1, when he will move to Marshall. Dr. Jacquot specializes in eye, ear, nose, and throat work.

At an orthopedic clinic held at Cloquet in October, twenty-three crippled children were examined, and some of them were advised to enter the State Hospital for Crippled Children.

Dr. E. L. Tuohy, of Duluth, a 1905 graduate of the Medical School of the U. of M., acted upon invitation as Chief of the Medical Service at the University Hospital during the week of October 3-8.

The North Dakota State Nurses' Association and the affiliated State League of Nursing Education met at Devils Lake last month. A good attendance and good programs characterized both meetings.

Dr. Herbert C. Watts has been appointed Chief of the Veterans' Hospital at Fort Harrison, Mont., to succeed Dr. W. D. Judkins, who goes to the Veterans' Bureau Hospital at Livermore, Calif.

Dr. B. J. Gallagher, who was four years on the staff of the Mayo Clinic, has moved to St. Cloud and joined the firm of Drs. Lewis and Freeman, to be known hereafter as Drs. Lewis, Freeman, & Gallagher.

A joint meeting of the Upper Mississippi and the Stearns-Benton County Medical Societies was held at Long Prairie last month. An excellent program of scientific papers and their discussion was presented.

Dr. D. C. Locheal, Deputy Health Officer of Rochester (Minn.), says that co-operation between the Health Department, the schools, and the parents of that city has almost abolished contagious diseases from the city for the past two years.

Dr. Arthur N. Collins, Chief of Staff of St. Luke's Hospital, of Duluth, presented a notable paper last month at the American Hospital Association in Minneapolis on the subject of group nursing. The plan had been given a very successful trial in that hospital.

At the annual meeting of the St. Louis County Medical Society, held at Duluth last month, the following officers were elected: President, Dr. J. R. Kuth, Duluth; vice-president, Dr. R. D. Gardner, Eveleth; secretary-treasurer, Dr. F. J. Lepak, Duluth; delegate, Dr. F. H. Magney, Duluth.

Dr. Nellie S. Shulean, of Cambridge, died last week at the age of 63. Dr. Shulean graduated from the Minneapolis College of Physicians and Surgeons in the class of '93, and soon began practice at Cambridge, being the first physician to practice medicine in Isanti County and one of the first women to practice anywhere.

At a meeting of the citizens at Fairmont last month the proposal to open a hospital and clinic in that city did not meet hearty approval. The question as to whether they will build a community or a private hospital will have to be threshed out. The chiropractors and osteopaths want the former.

Dr. Harold C. Ochsner, of St. Paul, is a new Fellow in the Mayo Foundation and has been assigned to service at St. Mary's Hospital with Dr. Snell. He received the degree of B. S. in 1924, M. B. in 1926, and M. D. in 1927 from the University of Minnesota. He served his internship in the Ancker Hospital, St. Paul, during 1926-1927.

Dr. Frederick C. Hill of Cando, N. D., has been appointed to the Mayo Foundation and assigned to service in the postoperative surgical section. He received the degree of B. A. from the University of North Dakota in 1921 and the degree of M. D. from Columbia University in 1925. He served his internship in the

Philadelphia General Hospital from 1925 to 1927 and was instructor in physiology and pharmacology at the University of North Dakota during 1923-1924.

The cornerstone of the building in which to carry on the work of an institution bound to become a notable one, the Children's Hospital, of St. Paul, was laid last month with appropriate ceremonies and with brief addresses by the founder, Dr. Walter R. Ramsey, of St. Paul; Dr. Isaac A. Abt, Professor of Pediatrics, Northwestern University; Dr. John E. Anderson, Director of the Institute of Child Welfare of the University of Minnesota; Robert E. Neff, President of the American Children's Hospital; and others.

#### **The Stutsman (N. D.) County Medical Society**

The next meeting of the Stutsman County Medical Society will be held at 6:00 P. M., at Trinity Hospital, on Monday, November 28. A dinner will be served by the Hospital.

The meeting will consist of a symposium on "Malpractice." Drs. N. O. Ramstad, of Bismarck, and E. A. Pray, of Valley City; Attorney Geo. Thorp, of Fargo; and representatives of the malpractice insurance companies will lead the discussion.

All doctors in the district, whether members of the Society or not, are invited to be present.

The annual election of the officers of the Society will also be held at this time.

H. M. BERG, M.D.

Secretary

#### **Huron District Medical Society of South Dakota**

The Huron District Medical Society met at Miller, S. D., on Friday, October 7, 1927, as guests of the Miller members of the Society. An excellent pheasant dinner was served at the Vanderbilt Hotel after which the meeting was adjourned to the American Legion Hall for the scientific program.

J. C. Ohlmacher, M.D., Professor of Pathology at the University of South Dakota Medical School, presented the "Kahn" test for syphilis.

G. R. Albertson, M.D., Dean of Medicine at the University of South Dakota, gave an interesting outline of the Medical School: Its History and Its Needs.

J. F. D. Cook, M.D., of Langford, Secretary-treasurer of the State Association, urged the importance of choosing an efficient secretary for the District, and, once found, continue him in office so that the lines of communication may be held intact. Huron district is to be congratulated in having an efficient secretary.

D. A. Gregory, M.D., of Miller, reported several cases of diaphragmatic pleurisy, simulating an acute abdomen.

Other visitors from outside the District included Dr. T. F. Riggs and Dr. A. A. McLaurin, of Pierre, and Dr. P. McWhorter, formerly of Miller, now of Beverly Hills, California.



A number of the doctors took advantage of first day of pheasant shooting, and spent part of the day hunting pheasants.

### The Whetstone Valley District Society No. 12

This Society met at Milbank, S. D., on Tuesday, October 11.

An excellent pheasant dinner was served as the first item on the program, at the home of Dr. and Mrs. Flett, Mrs. Flett being assisted by Mesdames Lowthian, Jacotel, and Cliff. The way the M. D.'s applied themselves to the splendid dinner was sufficient evidence of their appreciation of the ladies' ability to entertain.

Dr. Donald McCarthy, of Minneapolis, Minn., gave a Heart Clinic. The material furnished by the local doctors was abundant and of interest. All appreciated the clever presentation and elucidation of the various lesions found. Declared by all in attendance to be a most profitable meeting.

S. M. Hohf, M.D., of Yankton, S. D., accompanied by his wife, made his official visit to the Society, stressing the necessity of an effort, collective and individual, in bringing into the Society every eligible man in the District, asking the men to have this as their slogan for the year.

State Secretary J. F. D. Cook was also a guest of the Society.

### HENNEPIN COUNTY MEDICAL SOCIETY

#### Program for November, 1927

November 2.—Wednesday noonday meeting:

Annual Memorial Meeting. Short biographical sketches will be given of members who have died during the year, and the Address will be delivered by Hon. THEODORE CHRISTIANSON, Governor of the State.

November 7.—Monday evening, regular monthly meeting:

The Use of the Audiometer in the Minneapolis Public Schools.....HORACE NEWHART, M.D.  
Hennepin County Medical Society Prize Military Essay by U. of M. student..MR. FRED WIECHMAN.  
Symposium on Cancer of the Uterus.

J. C. LITZENBERG, M.D.

R. E. SWANSON, M.D.

S. B. SOLHAUG, M.D.

Moving Pictures of the Golf Tournament at the Bloomington Golf Club will be shown by Mr. Danielson, who took the pictures.

November 9.—Wednesday noonday meeting:

Group Pathological Conferences for Medical Staffs and Societies...E. L. TUOHY, M.D., Duluth.

November 16.—Wednesday noonday meeting:

Chronic Gastro-intestinal Diseases; Interpretation of Symptoms.....J. M. LAJOIE, M.D.

November 23.—Wednesday noonday meeting:

Gastric and Duodenal Ulcer: Surgical Treatment.....R. R. CRANMER, M.D.

November 30.—Wednesday noonday meeting:

Demonstration on a Patient of Duodenal Siphonage of Bile and Determination of Pigment Content. Summary of 12 years work.

J. P. SCHNEIDER, M.D.

J. B. CAREY, M.D.

Please note:—

All meetings are held in the Library Rooms, Donaldson Building, Seventh and Nicollet. Wednesday noonday meetings begin at 1 p. m., with luncheon served in the Library Rooms at 12:30 preceding the meeting.

The Monday evening meeting is a dinner meeting; dinner being served in the Library Rooms at 6 p. m. and the meeting called to order at 7 p. m.

The University of Minnesota Pathological Department, under the direction of Dr. E. T. Bell, will take charge of a Pathological Conference for 15 minutes at the beginning of each Wednesday noon hour. (These will begin the 3rd Wednesday, November 16). Dr. Bell is attempting to make these snappy and instructive.

This is something new and the Program Committee hopes that it will work out favorably and promote a greater interest in our Wednesday noon meetings. You cannot afford to miss these meetings.

Luncheon at 12:30 in the Library Rooms.

STANLEY R. MAXEINER, M.D., President  
ERLING W. HANSEN, M.D., Secretary

### A Dare Hemoglobinometer Wanted

Give full description and price asked. Address 613, care of this office.

### Physician Wanted

In a good South Dakota town. Will be guaranteed \$5,000 a year. Address 415, care of this office.

### Alpine Lamp Wanted

Recent model, air-cooled. State make, model, price, etc., by early mail. Address 418, care of this office.

### An Associate in Surgery Wanted

Wanted—An associate in surgery and general practice in Minneapolis. State age, school, and hospital service. Address 409, care of this office.

### Location or Association Wanted

By a graduate of the School of Medicine of the U. of M., in a town where the possibility of development is large. Address 414, care of this office.

### Laboratory Technician Desires Position

Has had six years experience in urinalysis and hematology in one of the largest Clinics in the country. Best of references. Address 412, care of this office.

### Locum Tenens Work Wanted

By an Illinois M. D. Internship taken at Ancker Hospital, St. Paul. Age 26; single; holds Minnesota license; available on short notice. Address 403, care of this office.

### Laboratory Position Wanted

A woman with six months training in laboratory work, physiotherapy, and x-ray work desires position as doctor's office assistant or in an institution. Address 416, care of this office.

**Specialist Wanted**

Eye, Ear, Nose, and Throat man to become associated with a group of physicians in Minneapolis. Complete equipment with x-ray and clinical laboratories. Address 417, care of this office.

**Laboratory Technician Wants Position**

A capable and experienced laboratory technician desires position. Has had four years experience, besides training at Minneapolis General Hospital. Available at once. Address 411, care of this office.

**Good Location for an Eye, Ear, Nose, and Throat Man Wanted**

I desire to locate in a good country town in Minnesota, and shall be pleased to correspond with any physician who can recommend such a location to practice my specialty. Address 407, care of this office.

**Practice for Sale in Eastern South Dakota**

General practice, pays \$7,000 yearly. Town of 500 with four small surrounding towns. Nearest competition 20 miles. One other doctor. Equipped office, drugs, and introduction, \$500.00. Going to Europe. Address 408, care of this office.

**A Locum Tenens Wanted in North Dakota**

I will turn over my practice in North Dakota for two or three months to a good man who will

rent my office (\$25 a month). Practice has run from \$7,000 to \$8,000 yearly for a number of years. Town of 800; competition, very little. Address 410, care of this office.

**Practice for Sale**

Near Minneapolis. Am taking up specialty and will sell practice, paying \$500 monthly, and equipment, furniture, etc., for \$500. Location well established, and rent cheap. Part cash and part time if needed. Address 419, care of this office.

**Practice for Sale**

I will turn over my very good practice to a good man buying my office equipment. Easy terms if desired. This is in north central North Dakota, in the best portion of the state. Crops usually good and very good this year and last. This will stand investigation. Address 406, care of this office.

**Fine Minnesota Practice for Sale**

In a very prosperous community. Population of town, 1,000, and a community hospital. Only one other physician in town. Practice pays from \$12,000 to \$15,000, and 90 per cent collectible. Will sell for price of building (a good investment) and office equipment, and work with purchaser for three months. A real bargain. Address 404, care of this office.

## Convalescence after Surgical Operations

Surgical shock may profoundly depress the nervous system. In convalescence from such a condition

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# THE JOURNAL-*LANCET*

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## INTERCOSTAL NEURALGIA\*

By R. E. PRAY, M.D.

VALLEY CITY, NORTH DAKOTA

As an interne under Dr. J. B. Carnett, Professor of Surgery of the University of Pennsylvania Postgraduate School, my attention was first drawn to the subject, which he has chosen to call "Intercostal Neuralgia," as he says, "for want of a better name." It is really folly to attempt to put this condition before you from a paper. I could much better present this as a clinic [with the various patients who have come under my care since practicing in North Dakota] than I can convince you of the scope of the problem from this platform. However, I will do what I can, with the promise that you will become firm converts upon return to your respective practices, if you will keep the essential points in mind and conscientiously carry them out.

You will all admit—those of you who do surgery—that you have operated many times on cases of acute and chronic appendicitis and cholecystitis with the inward conviction that the appendix or the gall-bladder did not look pathologic grossly; however, the patient may have shown an uneventful recovery and everything may have gone fine until perhaps the patient took up his or her normal existence again or perhaps a slight cold or tonsillitis occurred during convalescence. Again, without waiting for you to get your breath, the patient developed the

old symptoms. If it was long enough after the operation you quite confidently told them "adhesions" were the cause: or if the pain had shifted to another locality (which is seldom the case) you operated again without the satisfaction of verifying your diagnosis. If the recurrent symptoms interrupted convalescence, you fretted along and the patient got over them, opiates playing a large part in your attempt to give the patient relief. In fact, every surgeon knows there has been an imposter working in the field of diagnosis, and every internist has felt the lack of a satisfactory explanation for the cases that have been thrown back on him after the surgeon has had his inning.

For the reasons given I ask you to bear with me while discussing the subject in hand, which, for lack of time, must be dealt with in a hurried manner.

The one big statement that I wish to make and then enlarge upon is, that the pain and hyperesthesia of pseudo-appendicitis, pseudo-cholecystitis, and all pseudos for which the internal organs have been blamed, are not due to any pathological condition of any internal organ, but to the tenderness of the parietes localized to those areas or that area supplied by the affected intercostal nerves.

### NERVE DISTRIBUTION

The intercostal nerve distribution not only covers the intercostal area, but supplies the en-

\*Presented at the Forty-Fifth Annual Meeting of the North Dakota State Medical Association, held at Grand Forks, N. D., May 25 and 26, 1927.

ture anterior abdomen wall. The sixth to the tenth intercostals supply the upper quadrants. Pain along their distribution, generally right-sided, leading to mistaken diagnoses of gall-bladder disease. Neuralgia of the tenth, eleventh, and twelfth intercostals and first lumbar create symptoms and signs akin to acute or chronic appendicitis with the usual form of examination.

#### STEPS IN DIAGNOSIS

When one approaches a patient complaining of abdominal pain the first step has always been observation. Following this was the attempt to get the patient in a relaxed state so that the abdominal wall would not offer resistance to the examining hand or hands. This has been routine, with the consequence that all signs of pain or tenderness evidenced by the patient were naturally believed to be intra-abdominal and whatever organ happened to occupy the intra-abdominal position was blamed. Dr. Carnett has devised a method to avoid this fault. His deep palpation is always checked by an examination for parietal tenderness. This he brings about by one of three methods: Either have the patient balloon up the abdominal wall and hold it as for defecation, or have him lift either his head or his heels from the table. By these means there is no pressure exerted on the intra-abdominal organs. Now, using a certain amount of pressure (not great but best graduated by experience), the tenderness brought out is either parietal neuralgia or that of a peritonitis. Further differentiation, however, excludes the latter.

It can usually be quite easily demonstrated in intercostal neuralgia that the tenderness is not uniform over the affected area. It will be found that there are various localized points along the outer border of the rectus where the branches of the intercostal terminate in penetration. This finding can be brought out with abdominal muscles either relaxed or rigid.

Whichever set of nerves are affected there is a fairly definite area of hyperesthesia. This area can be readily outlined by either Dr. Carnett's pinch test, which is to pick up the skin and subcutaneous fat between the thumb and finger, or by superficial tests, consisting of pricking with a pin, stroking with a feather, or applying heat and cold. Contrasting the results with those of the same area on the opposite side of the abdomen will soon convince the doubter of the nerve element involved. The patient will even give evidence of excruciating pain over the affected area by the simple tests just mentioned,

while on the opposite side there will be very slight disturbance caused.

A fairly definite course of the various intercostals can be demonstrated by tenderness along those supplying the affected area. However, the big point here is a fact evidently overlooked by those advocating the visceroparietal reflex as explanatory of the pain, that a more careful study of the patient will reveal the majority of cases showing a less apparent generalized tenderness along the intercostals, even, as Dr. Carnett emphasizes, often including as high as the first intercostal. When the first or second intercostals are affected, the arm area supplied by them is tender or even painful, often causing a pseudo-angina pectoris. The involvement of the ilio-inguinal causes tenderness to be demonstrable often "two inches below and parallel to Poupart's ligament, and pinching of the two labia majora between thumb and finger may reveal hypersensitiveness of the labium on the affected side." "When the last intercostal and first lumbar nerves are affected, there is very commonly an area very sensitive to pressure over the upper part of the buttock just beneath the crest of the ilium, well posterior to the great trochanter."

Another very simple and important test is that of the anterior-superior spines. Grasping each in turn between the thumb and finger, slight pressure will cause the patient to wince or even cry out on the affected side, with slight or no evidence of discomfort on the unaffected side.

A diagnostic factor that is not of great import, but nevertheless always present, is the tenderness of the vertebræ at some point along the spine. Their number does not usually correspond to the number of affected nerves, and the cause of their tenderness is not understood. This is only brought out by deep pressure.

Finally, through the relaxed abdomen by means of deep palpation, it is possible to show a very marked degree of tenderness of the spine. This can be demonstrated from either fossa, right or left. It is merely a verification of the type of patient and the condition you have to deal with.

#### TYPES

The subject is still entirely too new for anyone to lay down specific causes with the elimination of all others; and before considering the causes it is most appropriate to deal with the type or types of individuals that are usually the victims of this syndrome. As a class, one may place the so-called neurotics under this heading.



They are forever exaggerating their ills, at least so we have always judged; but as a class they represent a highly developed nervous system, and not a class that depends on brawn. Their physical development is usually good, but worry always comes before pleasure with them. Consequently they take very little time to keep up their bodies. The result is that at middle age their bodies are not able to keep up the pace, and the brain and nervous system are affected by the toxemia of a poorly functioning eliminative process and poor supportive musculature.

I have never failed to find abnormal curvature of the spine in a patient suffering from intercostal neuralgia. In examination it is best to strip the patient—have him stand erect with his back to you. Invariably you will find either a marked lordosis or slight lateral curvature. The lordotic type is a heavy-set viscerotropic individual, usually of the female sex. Any age past puberty is eligible. The other type is either sex, and the lateral curvature is primarily dorso-lumbar with a compensatory curve in the cervico-thoracic segments.

#### CAUSES

First and foremost one must always accuse the foci of infection. There is absolutely no doubt but what there is an element of infection or toxemia to cause the flareups of symptoms that give the false picture before mentioned. These foci need not be enumerated, but, nevertheless, should warrant your careful attention in treatment.

Toxemias, whatever the cause, are certainly important. Perhaps it is only a mild degree of discomfort caused by a low-grade toxemia resulting from a slight upper respiratory infection. And this is important! For, if there is any factor that will cause this syndrome of intercostal neuralgia, it is the easily overlooked, mild "cold," so-called. And the more severe grades of respiratory disease do not necessarily make the symptoms any more apparent.

Any of the acute infections are capable of causing this syndrome. In fact that is often part of the picture long before you have your signs and symptoms for a diagnosis of the true disease.

Trauma must not be overlooked. It may be the very evident form with contusion, etc., attracting one's attention to the site of the trouble. More commonly it is the unpretentious, slowly effective trauma that does the damage before one is aware. The former type is selfevident. A severe injury to one's vertebræ may cause a dis-

location or fracture, giving no immediate concern other than the area of injury itself. Early convalescence follows, or, coincidentally, there is the pain on the abdominal surface, often bilateral or more commonly accentuated on one side or the other. The pain has often been the worry of internal injury at the same time the force dealt the apparent trouble. More careful examination and time clear up this phase. But the traumata exerted by the insidious factors are far more common and always overlooked. Some of us, myself for one, are always reminded by the tailor that one leg is shorter than the other. This is an old story and calls for no outward sign of interest. Just how common an infliction it is will not be fully realized until you have occasion to measure the patient's lower extremities as a matter of routine when searching for the remedy for intercostal neuralgia. For a fact it is, that the patient will present a common picture of appendicitis from just this trauma, exerted by the jar or strain that has gone on unnoticed ever since adolescence. You will find the patient presents the lateral curvature mentioned previously, or there is often, too, a sacro-iliac strain, usually on the side of the longer extremity. In the few cases that have come under my care those showing the short limb have all had it on the left side. This has resulted in the dorsal lumbar curve being to the left, with the resultant cramping of the right side of the vertebral border, and, naturally enough, the right intercostals are impinged upon, making them more sensitive to any infection. And you will say, how about the intercostal nerves affected by the compensatory curve of the upper thoracic and cervical vertebræ. You will find a decided degree of tenderness in the intercostal spaces of the upper left chest, especially evident when compared to the right chest.

Intra-abdominal inflammation here acts in the same way as infection elsewhere in the body, only as a source of toxic material to cause the intercostal flareup and not from the visceroparietal reflex, as so many may claim. True enough, it is said to occur with an appendicitis, chronic or acute, but this will be discussed later under differential diagnosis.

Lastly, any disease of the spinal cord or vertebræ causing an irritative lesion of the sensory tracts, roots, or ganglia will give the localized picture.

#### DIFFERENTIAL DIAGNOSIS

*Peritonitis.*—The differentiation here may be

very difficult at times. The rule of making a careful survey of all points given will give you, in the majority of cases, a certainty of what you are dealing with. The most important points are : (1) Does not involve the nerve trunks, (2) Does not give hyperesthesia in the buttocks, (3) Does not cause pain on pressure over the transverse processes of the vertebræ. But most important, I believe, is the tenderness of the superior spinous process of the ilium.

*Appendicitis.*—In the acute appendix the leucocyte count is high (from twenty thousand up). Intercostal cases that I have seen have never gone above eighteen thousand. Both may show nausea and vomiting and may give a history of repeated attacks localized to the lower right abdomen. Temperature rise can be an equal factor in either, but is usually higher in a case of acute appendicitis, one hundred degrees being an unusual height for the intercostal cases. To the ordinary abdominal examination the right side of both may show an increased rigidity. What then gives the difference?

(1). Tenderness of both anterior-superior spines, with a decidedly more noticeably tenderness of the right.

(2). One finger-poke palpation over a tensed and relaxed abdomen gives the following information :

If the abdomen is truly rigid, no voluntary rigidity accepted, this fact alone adds much to the assurance of a genuine acute appendicitis. On the other hand, if it is only a comparative rigidity, the left lower abdomen covered for contrast, the parietal tenderness as a verifying factor in favor of intercostal neuralgia can be brought out as stated by the thumb and middle finger-point pressure over the involved area while tensed, as described earlier in the discussion. The relaxed examination with no tenderness previously elicited over the tensed abdomen gives the credit to the underlying appendix, or too deep palpation may give pain from pressure exerted on a strained sacro-iliac joint below. But the latter may be verified by the posterior pelvic examination.

(3). Hyperesthesia over the lower right abdomen during an attack of supposed appendicitis has been given much stress as a diagnostic point, proving an involved appendix. Such is not the case. Hyperesthesia does not exist in true appendicitis; and, as Dr. Carnett has often emphasized, the surgeon's diagnosis before entering the belly was "acute appendicitis." The pathologist returned a finding of "chronic appendicitis." And the surgeon was satisfied that is was, as he

had said, "appendicitis." He forgot to remember that his diagnosis had been "acute." And now the point is made that a careful check-up shows that finding of chronicity is possible in every appendix of middle-aged patients. Hyperesthesia was there but the diagnosis pathologically of chronic appendicitis throws the condition back into the intercostal neuralgia syndrome.

*Chronic appendicitis.*—Here we may have no elevation of temperature or leucocytosis. And here again there is room for argument. Have these cases been chronic appendicitis? The statement may be much discredited by my listeners, but there is much reason to believe that what we have called chronic appendicitis has in reality been intercostal neuralgia. The patient complains of the recurrent ache or pain in the lower right quadrant. Casual examination reveals the tenderness, mild in type, on relaxed abdominal palpation over McBurney's. Diagnosis certain. Operation advised. Now, by following the given steps in diagnosis of intercostal there is no danger of a mistake here, and you will find that the majority of cases have been just that syndrome. The important differentiation here is made by means of the tensed and relaxed abdomen, verifying the parietal involvement. Both the chronic and the acute must be considered, but a careful study will show that the frequent preliminary factor has been a severe or more often a mild upper respiratory infection. It will be remembered how great was the number of appendectomies performed on cases convalescing from the influenza in the 1918 epidemic, and that the acute appendix was not found, so they admit, in the great majority of cases. It was none other than the syndrome of intercostal neuralgia, and it will continue to fool you until you believe that it exists and make a practice of examining for it.

*Cholecystitis.*—The sixth to the tenth right intercostal nerves supply the upper right quadrant of the abdominal wall. Due to one of the causes given previously, pain along these nerves gives rise to symptoms akin to either acute or chronic cholecystitis. History and physical examination has generally been considered of the first importance in diagnosing biliary lesions. But, as Dr. Carnett so often brought out, as I trailed him about the wards, "painful affections of the intercostal nerves can give a perfect history, symptomatology, and signs of gall-bladder disease and biliary colic." / In fact the majority of cases referred to him for cholecystectomy were determined to be intercostal neuralgia, and, unless further study showed a definite



underlying diseased gall-bladder, no operative interference was undertaken; however the two may co-exist, and here one must rely on the cholecystographic test, gastro-intestinal  $x$ -rays, and bile drainage to confirm an underlying pathology. Jaundice, naturally, is a further verification. The usual methods for the bedside study hold only for the intercostal neuralgia cases unless you can definitely palpate an enlarged gall-bladder. The pain radiating through to the shoulder blade and the local point tenderness can both be proved definitely to be intercostal, and to prove this the injection of novocain into the intercostal nerves supplying this upper right quadrant causes all pain and symptoms to cease.

*Gastric ulcer.*—Gastric or duodenal ulcer pain and distress can be, and often are, assumed by this same nerve affection. The reason for a point tenderness below the xyphoid is difficult to explain unless one checks up the other areas of possible involvement. It is then usually shown that this point is merely a terminal invading branch from either sixth intercostal, or both. The vomiting with relief as a symptom is not hard to consider as part of the picture when one realizes that the extreme hyperesthesia is part of this syndrome. In the lower abdomen it is often severe enough to force the loosening of a belt or corset for relief. So the stomach stretched with food exerts pressure on the parietal wall, therefore the intercostals; and the pain causes the vomiting resulting in relief because the pressure is gone. Here there is not the hyperacidity or occult blood of the gastric analysis the  $x$ -ray is negative and the case clears up as the affection subsides. I cannot say whether the condition has been general over the state or not, but in our locality, following a typical influenzal onset, the majority of patients this spring have developed symptoms absolutely analogous to gastric ulcer, which subsided as time went on, rather than because of treatment, often lasting ten days to two weeks.

#### TREATMENT

This phase of the subject leaves much room for improvement. Some decided advance has been made, but much is still necessary before patients can be assured of permanent benefit. However, (1) foci of infection must first be gone over carefully as a possible source of the toxicity which aggravates the condition; (2) the gastro-intestinal tract must be studied thoroughly, and, besides, the importance of regularity, careful diet, and water drinking, the advisability of changing the intestinal flora must

be considered; (3) in the traumatic cases caused by the shorter extremity, elevation of the heel on the shoe of the short side gives miraculous improvement [Sounds like quackery does it not? But cases of your own will prove to you that it is not.]. You may determine the necessary heel height by stripping the patient and, with graduated blocks, determine the necessary height to correct the lateral curvature above in the spine. In other words, to level up the crests of the pelvis by inserting the necessary number of blocks under the short extremity. This I have found unnecessary. With the patient reclining horizontally, by measuring the distance from each anterior-superior spine to the respective inner malleoli the difference in inches or centimeters has given practically as satisfactory results for correction.

The severe flareups of intercostal neuralgia following gall-bladder operations are due to the over-extension of the spine during the operation, says Dr. Carnett. Puerperal flareups in cholecystitis cases are truly only intercostal neuralgia due to the position and strain exerted during childbirth. For these flareups, a comfortable bed and mattress with abundant rest are all that is necessary in most cases, but others require real support. One case, a convalescent cholecystectomy, had such severe pain as to make him attempt suicide. Morphine had no effect. A plaster molded jacket for spinal support gave instant relief.

In the lordotic cases, usually female of the visceroptotic type, a fairly rigid well-fitting supportive garment extending from below the breasts to below the trochanters will give much benefit. Often I found this type to require an elevation of a heel as well.

The part in present treatment that I have found to be quite instantaneous in its relief, but not lasting, is the intravenous administration of sodium iodide, 10 to 20 c.c. of a fifteen-grain or thirty-grain solution, depending on the severity of the pain. However, here it is wise to add as a matter of caution a careful study of the vertebral column, which had best be made by the  $x$ -ray to exclude any possibility of a tuberculous spine. Following the intravenous medication I have found it possible to hold down the discomfort to a minimum with iodides by mouth, which I have preferred to give in the form of oxyl iodide, a Lilly product, put up in capsule form. Would the relief gained from this form of treatment not verify to an extent the fact that infection is the underlying cause of the flareups in symptoms?

Dr. Carnett has relieved the symptoms by the injection of the novocaine solution into the intercostal nerves supplying the affected area. On last report in the more severe cases not afforded sufficient relief by the measures mentioned he has resorted to nerve resection. The results gained have not been published, but it is sufficient to say here that cases requiring such radical treatment are very rare.

#### CASE REPORTS

CASE 1.—Female, aged 23. Plump, visceroptotic, lordotic type.

History of sinus trouble. Family history, negative.

P.M.H. Operated on two years ago; appendectomy; relief of symptoms for about six months. At that time patient caught cold, and suffered from severe frontal headaches; a decided return of pain in the lower right quadrant identical with that previous to operation. Also had slight backache. Doctor consulted; stated he believed the abdominal pain to be due to adhesions. Advised reference to a nose and throat specialist. The sinuses were reported suspicious, but no radical measures were undertaken. Cold and symptoms subsided coincidentally some two weeks later. Since that time patient has had several similar attacks but has had no further study of the sinuses.

H.P.I. Came under my care about six months ago. All symptoms aggravated. Coryza and right frontal headache severe. Walked bent over to the right because of pain in right lower quadrant. Advised hospitalization.

P.E. Transillumination of sinuses showed suggestive cloudiness of right frontal sinus. Study of abdomen gave extreme pain to poke examination over tensed abdomen on lower right quadrant and slightly aggravated over the left. Same findings over relaxed abdomen. Patient cried out with pain when slight pressure was made on the right anterior-superior spine; some discomfort elicited over the left. Slight stroking over lower right skin surface caused patient to weep from the discomfort. Tenderness elicited over second and third lumbar vertebrae. Spine tenderness brought out by deep slant pressure through the relaxed abdomen from both quadrants was very marked. Two nerve routes could be readily traced by the pain. Pinching of the skin and subcutaneous fat between the thumb and forefinger gave a typical result. Left lateral curvature of the dorsolumbar spine evident. Lordosis marked. Leucocyte count ten thousand. Temperature 99 degrees.

Treatment: Rest in a hard hospital bed gave no relief. X-ray of spine showed no lesion. Intravenous iodides gave almost immediate relief which was sustained for about thirty-six hours. Later a supportive garment was secured with resulting benefit. Elevation of left heel straightened out the spine and leveled the pelvis. Patient allowed up and about. Oxyl iodides administered over a couple of weeks. Since then, patient has had an occasional coryza and sinus headache, but no return of her intercostal neuralgia symptoms.

CASE 2.—Female, aged 17. Well-developed, flat pelvis type.

P.M.H. No previous operation. Has had several recurrent attacks of lower right-sided abdominal distress but never severe enough to consider worth mentioning.

H.P.I. About seven months ago patient was brought to the hospital with a decided tenderness and pain in lower right quadrant, voluntary rigidity, and with the history of nausea for the past seven hours.

P.E. Symptoms were entirely those of intercostal neuralgia or appendicitis and physical findings upheld that of intercostal neuralgia. Leucocyte count rose from seventeen thousand on admission to eighteen thousand in twenty-four hours. Temperature rose from 100° to 101°. Both of these findings were unusually high for intercostal neuralgia. On advice of a surgeon operation was considered feasible. The operation revealed a normal appendix. Convalescence was uneventful. About four months later I wrote Dr. Carnett saying we had exploded some of his theory. The reply was that he "would bet a dollar to a hole in a doughnut" that within six months after date of operation, or when she had returned to her normal activity, the entire intercostal neuralgia syndrome would reappear. Two weeks after receiving his letter she visited the office with the entire picture as predicted. She has refused suggested treatment.

CASE 3.—Male, aged 16. Slender, fair, nervous.

P.M.H. Occasional slight pain in right lower quadrant since taking course in Tractor School four months ago.

H.P.I. Twelve hours previous to arrival at the office he had been seized with sudden pain in the lower right quadrant. No vomiting or nausea. Bowels open normally. Slight coryza.

P.E. Findings were typically those of intercostal neuralgia. Left extremity three-eighths inches shorter than the right. Curvature of the dorsolumbar spine to the left.

Treatment: Elevation of left heel the prescribed amount gave entire relief of symptoms within an hour following the correction. He has had no return of the trouble in the month that has elapsed.

#### SUMMARY

I have purposely neglected to make reference to other theories because of the time allotted and the endless detail involved in such a discussion. You will say, as one of your worthy colleagues did say after I had attempted to explain intercostal neuralgia to him, "Well, then the chiropractor is right." My feeling is that the chiropractor has done his work through the massage given the the supportive muscles of the spine which has tended to correct the curvatures. And also his program of treatment carries him over a sufficient number of days to allow the neuralgia to subside.

In closing let me say that if you give these points in diagnosis a conscientious application



you will be convinced that Dr. Carnett is right when he says the affection of the intercostal nerves supplying the anterior abdominal wall, including the parieties, is the cause of the symptoms which in the past have led to much unnecessary, non-beneficial surgery on the unoffending intra-abdominal organs.

## DISCUSSION

DR. PAUL H. BURTON (Fargo, N. D.): I think Dr. Pray has given us an admirable paper and one which we can all take a lesson from. I think we all agree that the pelvic and abdominal conditions often give us confusing symptoms.

DR. THOMAS MULLIGAN (Grand Forks, N. D.): I would like to know whether the patients who suffered so severely from the intercostal neuralgia were not of the neurotic type. Some of the things Dr. Pray mentioned made me think they were neurotic as they responded so promptly to treatment, and I wondered if this might not have had something to do with the symptoms they presented. The paper was very interesting.

DR. JAMES GRASSICK (Grand Forks, N. D.) It is refreshing to have a paper that anyone can follow. Essayists are often accused of "shooting over the heads of the audience," but in this instance there is no one present who has not had many of these cases of intercostal neuralgia.

Pressure at the point of exit of the intercostal nerves has been given as a cause of the pain. This

would seem to emphasize the fact that the whole realm of human knowledge is not too wide from which to cull something for the relief of suffering and that even from the despised cults we can now and then get a suggestion.

At the University of North Dakota, where over three hundred freshmen girls are in attendance, complaints of chest pains are very common. When these are located in the vicinity of the left nipple, heart trouble is nearly always thought of by them. On examination in the great majority of cases the discomfort is found to be due to intercostal neuralgia, and that heat applied to the seat of trouble usually gives relief. My own personal experience with a recurring intercostal neuralgia that is relieved also by heat would seem to indicate that focal infections are not the only causes of this prevalent and at times troublesome malady.

DR. PRAY (closing): In reply to Dr. Mulligan; I think these patients are not necessarily a neurotic type. Dr. Grassick says he has had a large number of cases among the pupils at the University, and I think he will not claim that they are all neurotic. I think further investigation on the part of Dr. Mulligan will show him that this is not the case. For, after all, what are neurotics? Is this not a term applied to that group of individuals with various vague complaints for which we, as physicians, can find no cause. Would it not be wise to approach this subject of intercostal neuralgia with an open mind and prove for yourselves that this condition accounts for a great many ills which we have heretofore been inclined to belittle.

## THE DIAGNOSIS OF GASTRO-INTESTINAL DISEASE\*

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The purpose of this paper is not to cover the entire field of gastro-intestinal disease, but, rather, to emphasize the value of routine physical examination and the extreme importance of accurate and detailed history taking when considering patients who present themselves with so-called "stomach trouble."

In considering the patient who presents himself because of gastro-intestinal symptoms, it is of the utmost importance that the physician realize the frequency with which extra-abdominal disease produces gastro-intestinal complaints. Until one has actually seen a number of such patients and found the cause of their complaints to be located elsewhere than in the abdomen, the importance of this group cannot be appreciated. The recognition of such a condition depends, first, on the fact that the physician is aware of the possibility, and, secondly, on the search for such a situation. My experience has been that

organic heart disease, hypertension, nephritis, pulmonary tuberculosis, and pernicious anemia head the list of those diseases most likely to deceive us. Tabes is not so common. Pregnancy is common, but is more frequently thought of by the physician. Other conditions can be readily brought to mind.

The recognition of these conditions is, as a rule, an easy matter if they are considered and a careful physical examination of the patient is made. Nothing is more satisfactory than to see the "stomach trouble" of a patient with a failing heart disappear following rest in bed and the administration of digitalis. Without doubt the general practitioner and the man interested in gastro-intestinal disease see the early cases of heart failure long before they arrive at the door of the cardiologist. In a similar manner the very earliest manifestation of pulmonary tuberculosis, or hypertension, or even of exophthalmic goiter, which attract the patient's notice, may be gastro-intestinal in nature. Every prac-

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itioner has the ability to diagnose a chronic nephritis or a failing heart if he but thinks of the condition and will take the time and effort to make a complete examination of the patient.

There still remains a large group of patients who come in because of gastro-intestinal complaints, and in whom one will be unable to find an adequate anatomical basis for their complaints. I refer to those people suffering from a psychoneurosis. This group is composed largely of women, and in my experience they have been almost entirely young women. These are the ones who either consciously or unconsciously express their dissatisfaction with life by the development of gastro-intestinal symptoms. In certain instances the patient herself is not aware of the cause of her dissatisfaction. More often she is aware of it, but nurses her troubles and confides in no one. Whenever a young married woman begins to relate a chain of gastro-intestinal symptoms which do not fit in with the more common abdominal conditions, one should have in mind the possibility of a neurosis. Nausea and vomiting and vague abdominal distress, either not related to meals or coming on in such a patient immediately after eating, is to me always suggestive of neurosis. The recognition of an existing neurosis depends entirely on the ability of the physician to get the confidence of the patient, and finally persuade her to pour out the tale of woe and worry which has been torturing her. Although one may not be able to change materially the lot of the young wife of a struggling farmer, tired, overworked, and disappointed in her present condition, still the mere bringing to the surface of this hidden dissatisfaction will do much towards aiding the patient in acquiring a normal attitude towards life, and, with it, an alleviation of her gastro-intestinal complaints. At least, the patient is spared a long and useless régime of medical treatment, or, in instances that I have known, needless and harmful surgery. To my mind this group of patients is the least understood of all who come to a doctor for treatment.

The tendency among many of the medical profession to-day is to place too much reliance on the laboratory findings and particularly on the *x*-ray in the matter of diagnosis. Although it is true that the expert roentgenologist can diagnose even as many as 95 per cent of gastric and duodenal ulcers, still it is also true that the same ulcers can be diagnosed, or at least strongly suspected, by the general practitioner if he takes a careful history. Nowhere else in medicine is the history of such importance as in the

diagnosis of gastro-intestinal disease at the time of examination. The physical findings in the abdomen are of small importance. I do not mean to minimize the importance of physical findings when present. A mass in the epigastrium of a middle-aged man almost always proves to be a malignancy of the stomach, regardless of history, but, I believe, most mistakes in diagnosis in diseases of the gastro-intestinal tract are due largely to poorly taken histories.

The stomach itself is the seat of pathological condition in about 15 per cent of all cases coming to a physician for so-called "stomach trouble." The lesions found are, for all practical purposes, limited to two only, peptic ulcer and carcinoma. The other possibilities are so rare that they need not be considered here. The history of a carcinoma of the stomach runs pretty true to form. "Stomach trouble" developing rather suddenly in a man previously free, middle-aged with an accompanying loss of weight, strength, and appetite, should lead us straight to a diagnosis of carcinoma of the stomach. Once suspected, the examination of the stools for occult blood with the patient on a meat-free diet, and fluoroscopy of the stomach, clinch the diagnosis. The typical cases can be ferreted out if the condition is only suspected. Only too often are they so far advanced that anyone can diagnose them.

Peptic ulcer—and I include both gastric and duodenal ulcer under this heading—as a rule gives a fairly typical history. Any patient, more often a middle-aged man, giving a history of a regularly recurrent epigastric distress coming on from two to four hours after meals or at one to two o'clock in the morning, with periods of freedom from distress lasting often for months, the entire history extending over a period of several years, should be suspected of ulcer. When this distress can be relieved, particularly by food taking, by alkali, or emptying the stomach, the chances are all that he has an ulcer. Of course, the *x*-ray is of the greatest value in corroborating this diagnosis and is always used, but one should not hesitate to make this diagnosis in the presence of a good history, even though the *x*-ray does not bear one out. Observing the effect on the distress of feeding or of the administration of alkali or aspiration of the stomach at the height of distress, is a most valuable procedure, and one which can be done by the general practitioner fully as well as by some one in a hospital. The examination of the stool for occult blood with the patient on a meat-free diet often gives important informa-



tion. Gross hemorrhage, usually vomited when from a gastric ulcer, and usually passed entirely by bowel when from a duodenal ulcer, is almost diagnostic in the presence of a history suggestive of ulcer. It is relatively uncommon.

The correct diagnosis of cholecystic disease depends in a great measure on an accurate and detailed history. Those cases which give a history of a typical attack of gall-stone colic with severe epigastric or upper abdominal pain radiating to the shoulder and often only relieved by morphine or occasionally by vomiting, are easily diagnosed. We are especially fortunate when we can see the patient in the midst of an attack. A woman who is fat, has borne children, is in mid-life, and complains of upper abdominal pain with abdominal distress, belching, gaseous distention, usually, but not always, related to food taking, as a rule is found to have gall-bladder disease, provided that somewhere in her history the story of an attack of severe upper abdominal pain can be elicited. Although the immediate complaint may be more of the belching gaseous type of indigestion, it has been my experience that in practically every case of gall-bladder disease a history of a definite attack of severe colicky upper abdominal, often epigastric, pain can be elicited. In many cases the patient may have considered the pain "stomach cramps," and is not inclined to link it up with gall-bladder disease. The history of soreness over the abdomen persisting after such an attack of pain is very suggestive of cholecystic disease. Another point which has been brought out in the post-operative history of these cases is that those cases which have been diagnosed gall-bladder disease without stone, but which have given no history of severe cramp-like pain, are, as a rule, unrelieved by surgical procedure. It is very important that this history of severe pain be obtained before we venture a diagnosis of gall-bladder disease. The presence of jaundice in such an attack is even more suggestive. So-called "stomach trouble" coming on in the night with severe pain and requiring morphine, is, as a rule, due to gall-stones. Gall-bladder disease is to be differentiated from peptic ulcer by the presence of the severe pain, the irregularity of the symptoms, and the inconstancy of their relief by food taking or alkali in gall-bladder trouble. The Graham test is proving to be a valuable addition to our diagnostic aids. Its use is indicated in the doubtful cases. A gall-bladder which has not filled with the dye or one which has filled but faintly, or one in which the emptying time is considerably delayed, together with

a suggestive history, is under grave suspicion. Occasionally we can see the negative shadows of stones in the dye-filled gall-bladder. The van den Bergh test has been of little practical value in my hands; however, its possibilities have been recognized and at times may be of great help. Conditions in the small intestine, apart from duodenal ulcer, scarcely warrant a detailed discussion here.

Diseases of the colon in these latitudes are not numerous. Carcinoma of the colon and sigmoid may present, as the very first symptoms noticed by the patient, the picture of an acute intestinal obstruction. As a rule, however, the symptoms have persisted for some months before the patient comes to a physician. Bleeding from the rectum, fowl discharge from the bowel, and difficulty in getting a bowel movement, often alternating with diarrhea, should always warrant an investigation in a patient in the cancer age. The number of cases of carcinoma of the sigmoid erroneously diagnosed and treated as hemorrhoids each year is appalling. Although the number of cases of carcinoma of the colon and sigmoid seen at the Peabody Clinic in the past six years is relatively small compared to other gastro-intestinal disorders, still some significant facts can be noted. Every case but two had been seen by one or more physicians before coming to the Clinic. Of these every case but one had been considered a case of simply hemorrhoids. One patient, a woman fifty-nine years old, had been treated for a period of a year by the physician for hemorrhoids. A distressing feature of this case was that the physician was also her son-in-law. Another patient, a woman fifty-one years old, had been operated on at a famous clinic three months previously for hemorrhoids. This woman was found to have a carcinoma of the descending colon. Her complaint had been a rather free and persistent hemorrhage from the bowel. In one case, a woman ninety-two years of age, the first symptoms were those of an acute obstruction. In every case but two the malignancy could be reached and felt by the examining finger in the rectum, and in only one case had a previous rectal examination of any sort been made on these patients. Proctoscopic examination and biopsy completed the diagnosis in all but two cases. In one of these the carcinoma of the descending colon could not be seen through the fourteen inch proctoscope, and the *x*-ray examination of the bowel gave no hint as to its presence. A persistent free hemorrhage from the rectum led to an exploratory laparotomy. The other of these two cases, a carcinoma of the

cecum, was diagnosed by aid of the x-ray and palpation of a mass in the right iliac fossa. A routine rectal examination would diagnose about ninety per cent of all these cases.

Ulcerative colitis, either the type known as chronic or that due to the entameba histolytica, should always be suspected in the chronic diarrheas especially when blood has been seen in the stools. Examination of the stools for pus and blood and proctoscopic examination will lead to a diagnosis in practically every case, since the pathology usually begins in the rectum and sigmoid and progresses towards the cecum. X-ray examination of the colon in the older cases of chronic ulcerative colitis presents a typical picture, and in such cases the diagnosis may be made by x-ray examination alone. The short rigid tube-like colon, as seen in the roentgenogram, will not be confused with any other condition. The presence of amebæ should be suspected and searched for in every ulcerative colitis. Scraping should be taken from the bases of the ulcers for examination. The finding of the ameba is most important since we have a specific in the emetin and coal oil treatment.

My experience with diverticulitis of the colon has been limited. When the condition presents itself clinically, it is often confused with carcinoma of the sigmoid, and the true nature of the process is not discovered except at operation. Multiple diverticula of the colon are occasionally found during a routine fluoroscopy of the bowel.

There remains still one group of patients whom I would like to mention for a moment. These are the patients who come to the physicians complaining of a variety of abdominal symptoms. They have pain in the abdomen, occasionally cramp-like, usually not severe, and often only a soreness located across the upper abdomen, and in either iliac fossa, more often in the right. Many are distressed by abdominal distention, particularly after meals with belching, heart burn, rumbling, and gurgling in the abdomen. A certain percentage of these folk have diarrhea. Often they are confirmed cathartic users. This

group comprises a large percentage of the cases diagnosed and operated on as other conditions, particularly as chronic appendicitis, a condition which as a clinical entity I do not believe exists. Other common diagnoses for this condition are adhesions and gall-bladder disease without stones. These are the patients who return to the surgeon with a recurrence of symptoms within a period of one to six months after their operation. They often go from one surgeon to the next seeking relief, which does not come through surgical procedures. These are the cases of spastic colitis or irritable bowel so well worked out by the late Doctor Sippy. This condition is easily diagnosed if one is only thinking of it, and it is my experience that it is a common one. The history of the above complaints, often coupled with a history of an appendectomy or a laparotomy for adhesions with a recurrence of symptoms, should lead to a correct diagnosis. The spastic tender colon is often easily palpated. The injection of a three-quart enema of tepid water slowly and under low pressure will reproduce the pain of these patients and help in diagnosis. One must not make the mistake in assuming that the spastic colitis is the only condition existing in the abdomen at the time the patient presents himself with symptoms. Fluoroscopy of the bowel in these cases gives an interesting picture. The barium enema moves around the colon as a small pencil-like stream in sudden darts and dashes. The head of this column of barium will often reach the cecum in the course of a few seconds. Later the bowel will relax its spasm and fill out to more nearly a normal size. Proctoscopic examination reveals practically a normal mucosa, as the condition is largely a functional one.

In closing, I want to emphasize,

First, The importance of physical examination in detecting extra-abdominal causes for gastrointestinal symptoms, and

Second, The immense value of a carefully taken history in differentiating pathological conditions existing within the abdomen.

## A CRITICAL STUDY OF THE INJECTION TREATMENT OF HEMORRHOIDS\*

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During the past few years much has been written concerning the injection treatment of

hemorrhoids. Many of the writers present a rather limited group of cases, and, imbued with the enthusiasm of a new-found method, they present their findings in too rosy a light. It takes

\*Presented before the Eau Claire and Associated Counties Medical Society, Eau Claire, Wis., May 6, 1927.



a large series of cases from which to learn all the problems and complications that occasionally arise. During the past ten years I have treated approximately two thousand five hundred cases of hemorrhoids by the injection of various solutions. From this series of cases I have tried to come to a fair evaluation of this method of treatment. Either because of the experience with this fairly large group or because of the dogmatic attitude and inflexibility of mind characteristic of approaching middle age I have a few quite definite opinions as to the value and limitations of this method.

Hemorrhoids may be divided into three groups, designated as internal, anal, and external; or there may be any combination of these three varieties. It is not always possible, however, to diagnose the type of hemorrhoid by its location. For example, an internal hemorrhoid is not infrequently prolapsed outside the anus. Due to inflammatory changes it may become so fixed in this position that replacement above the sphincter is impossible, even by manual effort. Despite this fact it is anatomically an internal hemorrhoid. The only criterion by which the type of a hemorrhoid may be determined is its epithelial covering. Any hemorrhoid covered by the typical pinkish, velvety, mucus-secreting columnar type of epithelium is an internal hemorrhoid. This is true whether it be found inside the rectum, in the anal canal, or outside the anus. This is the type of hemorrhoid, and the only type, which under certain conditions is suitable for injection. Any hemorrhoid which is covered by the smooth, squamous-celled, non-mucus-secreting type of epithelium is of the anal or external variety. These should never be injected under any circumstances. The reason for this is that, though the injection will cure the hemorrhoid, it produces severe pain and will likely leave a skin tag. Operation is less painful, no more confining, and the results are much better.

There are two distinct principles in the injection treatment of hemorrhoids. The first is the injection of caustic solutions with the idea of sloughing off the hemorrhoid. Phenol in strength varying from 25 to 95 per cent is the agent usually employed. I mention this method only to condemn it. It is true that any type of internal hemorrhoid may be treated by this type of injection and that one injection will "cure" the hemorrhoid. However, if it is a case where actual removal of tissue is necessary to produce a cure, surgical removal is far more exact and less dangerous than a slough. In producing a

slough it is impossible to regulate its extent. Deep crater-like ulcers, infections, severe secondary hemorrhage, and polypoid flaps of rectal mucosa are frequent complications. This was the method of the itinerant pile doctor, and the one which brought all injection methods into such disrepute with the majority of the profession.

The second method is the injection of milder solutions with the idea of producing sclerosis. This occludes the varicose hemorrhoidal vessel and thus obliterates the pile. Some inject this solution deeply into the hemorrhoid, others only under the mucosa covering the hemorrhoidal vessels. Good results are reported by both methods but since the cure depends upon obliteration of the varicose vessels I believe the injections deep into the hemorrhoid are the most logical. I am inclined to think that many of the so-called submucous injections are really interstitial and *this* accounts for the results. Prolapsus of the rectal mucosa frequently accompanies the hemorrhoids. To secure the best results the redundant mucosa must be anchored to the muscular coat of the bowel, which is done by injecting the solution between the mucosa and the muscular coats at points above the hemorrhoidal area.

There are a number of "favorite formulas" used and advocated by many physicians. It is my opinion that good results may be obtained by almost any solution, provided it is irritative rather than caustic in action and is used properly. The improper use of any solution may lead to sloughing and other complications. Inadequate experience as to the amount of solution to use in a given case, and lack of knowledge as to the proper time to give the injection, are the cause of trouble in almost every case where complications arise. No method is successful unless properly applied and no system is "fool proof." It is ridiculous to suppose that simply because a physician possesses a hypodermic syringe and a bottle of solution that without further ado he can inject hemorrhoids successfully and without complications. The technic is not difficult, but I feel that in order to do the work properly it is necessary that the physician observe a reasonably large group of patients throughout their entire course of treatment. Many of us are still observing new phases after a series of several thousand cases. Most of the reports of serious complications are from those who have attempted the method without adequate training. I know of one recent case where the entire lower portion of the rectum

sloughed, necessitating a resection of that organ and the formation of a permanent colostomy. Even this is no indictment against the method, and as serious complications have followed ill-advised surgical procedure. This was simply a case of a poorly informed and over-confident individual attempting to do something he knew little or nothing about.

As previously stated, it is the writer's opinion that good results may be obtained by any of a number of solutions. However, certain solutions do possess advantages over others. At the present time quinine urea hydrochloride, phenol, and alcohol are the active agents most frequently used. These drugs are probably as effective as any, although many others, either alone or in combination, are still being employed. In England the most frequent agent is phenol. This is used in from five to twenty-five per cent solutions. The diluent is usually water, glycerine or witch hazel. In this country a 5 or 10 per cent solution in a vegetable oil is most frequently used. Excellent results are reported from these formulas. Personally I have found the stronger phenol solutions unsatisfactory inasmuch as the injections are more painful and sloughs are more frequent. This is also true of alcohol as advocated by the German school. Occasionally I employ a 5 per cent phenol solution in olive oil, which is not painful, and in cases where it is necessary to produce adhesions between the mucous and muscular coats of the bowel I believe it is fully as satisfactory and less likely to produce complications than quinine urea hydrochloride. The use of quinine urea hydrochloride was brought out by Terrell in 1912. It is by all odds the most popular remedy in America at the present time. The strength almost universally employed is 5 per cent. In the majority of cases I believe this is the most satisfactory agent, at least it has been so in my hands. I have found this solution the least painful of any I have used, complications fewer, and permanent results better. The lack of pain is probably due to the fact that the drug itself is a local anesthetic. It also has the property of producing prolonged induration when injected in fairly concentrated solutions. This is a desirable action in the treatment of hemorrhoids, for, as the induration is slowly absorbed, it is replaced by a certain amount of fibrosis, which occludes the varicose vessel, thus curing the hemorrhoid. While there is no doubt that good results may be obtained by any number of solutions properly used, I believe that, every factor considered, quinine urea hydrochloride is the best solution known at present.

The solution having been decided upon, what type of hemorrhoid is suitable for injection? The first requirement is that it must be an internal hemorrhoid, as previously described. It must not be fibrous or acutely inflamed. It must either lie above the sphincters or at least can be replaced and will remain above the sphincters after injection. A hemorrhoid already fibrous obviously cannot be shrunk. The only injection treatment which will get rid of it is a process of sloughing. As this is inadvisable, excision is the best treatment. An acutely inflamed hemorrhoid is likely to be more painful after injection and sloughs are frequent. It is better if possible to wait until the acute inflammation has subsided. An internal hemorrhoid which cannot be kept above the sphincters after injection is always very painful—more so than following operation. Furthermore, if it becomes fixed below the sphincters, even though the vessel be destroyed, the mucosa will continue to secrete, causing a constant moisture about the anus. This type of hemorrhoid is rather infrequently met with, but if encountered it is best operated on.

With the above general consideration in mind, what may be said of the value of this method of treatment? There are several disadvantages.

1. It is useful only in the case of certain varieties of internal hemorrhoids. If in addition to the ordinary type of internal hemorrhoids the patient also has anal and external hemorrhoids these must be operated on. This being the case many patients prefer to have the whole trouble eradicated by one operative procedure.

2. It is not a quick method. At least four weeks are necessary for the average case. It is usually in those cases where injections are given at too frequent intervals that complications occur. In the case of a patient living in the same city as the physician the time element is usually of little importance since the patient is not incapacitated during treatment. However, in cases where quick results are demanded the interests of the patient are best served by operation.

3. In highly neurotic individuals the prolonged course of treatment is sometimes trying. Patients of this type can usually come to the point of going through a severe discomfort of short duration, while repeated treatment, even though not severe, shatters their morale.

It might seem from these observations that the injection method is of little value, but this is not true. If we substitute the word *ambulant* for *injection* I would say that 90 per cent of the hemorrhoidal cases may be cared for at the phy-



sician's office to the satisfaction of both the patient and the physician. This is done by injecting the internal hemorrhoids and by operation of external and anal hemorrhoids under local anesthesia. Any fibrosed internal hemorrhoid, polyp, or other minor condition may also be cared for by office operation.

The advantages are these:

1. In case of uncomplicated internal hemorrhoids the patient loses no time at all from his work. If external or anal hemorrhoids are present he probably loses two or three days at the time they are operated on. Obviously from the point of view of a business man or a wage earner this is important. In any event the patient saves his hospital expenses.

2. To the average patient the injection is less disagreeable and painful than the operative procedure.

3. Many patients will submit to this form of treatment when they refuse point blank to be operated on. Their suffering can be relieved.

4. There is a considerable group of patients who have other physical conditions which contraindicate operation or at least render it dangerous.

In conclusion, I may say that in so far as results are concerned there is little to choose between ambulant and purely surgical methods in about 90 per cent of cases. This is assuming that the work is done properly whichever method is used. About 10 per cent of the cases must be done surgically. I believe that the prejudice against the injection treatment is largely due to the fact that the average general surgeon or practitioner knows very little about it. He sees only the failures. These are frequently the result of the misguided attempt of some physician to treat a condition about which he knows little by a method about which he knows less. It is my personal conviction that the successful application of the injection method of treatment requires more experience and knowledge than the operative procedure. I feel that one should hesitate to attempt this form of treatment without having carefully observed a number of pa-

tients throughout their entire course of treatment. It is a lack of knowledge and the unscrupulous acts of the many charlatans that have placed this method under suspicion with so many of the medical profession. With the public it has always been popular. It is surprising that men of the highest intelligence in ordinary matters have drifted, in the case of rectal diseases, into the hands of men whose medical attainments and personal integrity would put a correspondence school chiropractic graduate to shame. There is only one way by which these patients can be protected against their own ignorance and kept in the hands of reputable medical men. That is to recognize the fact that the ambulant method of treatment has an undoubted place in rectal therapy. We must perfect ourselves in the technic so that we may employ it in suitable cases, at least where the patient prefers it.

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## INTERCURRENT TRAUMATISM IN EPILEPSY FOLLOWED BY REMISSION

By LEO KANNER, M.D.

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It is a well-known fact that traumatism occupies an important place in the etiology of epilepsy. Although it is quite uncertain whether

injuries to the head are to be looked upon as the actual causes or as precipitating factors only, the various statistics show that in from

3 to 8 per cent of the epileptics there is a history of such blows preceding the onset of the disease.

The nature of epilepsy also makes it intelligible that during its course, particularly during the grand mal seizures, the patients are likely to sustain injuries which occasionally become severer than the common tongue bites and minor lacerations of the skin. Fractures and dislocations in epileptics are not very frequent, it is true, but every institution housing a sufficient number of these patients knows of a few who show evidence of bones broken in the course of the disease. Spratling found 29 fractures in 825 cases of epilepsy (3.5 per cent).

In looking over the literature, we do not find any mention of the further course of the disease in such cases in which severe injuries were sustained. In the majority of the instances of intercurrent major traumatism which the author had the opportunity to observe, the blow usually seemed to exercise no influence whatsoever upon the subsequent fate of the patient. In one case, however, the results arising from the injury were so unusual and had such a beneficial effect upon the patient's physical and psychical condition, checking the seizures completely and restoring his mental faculties to fullest extent, that it is worth while to give a description of the case.

Robert L. White, native born of German descent, a South Dakota farmer, of common school education, was committed to the Yankton State Hospital on July 10, 1922. He was then thirty-six years old. He had been suffering from epilepsy since the age of sixteen, the seizures becoming more frequent from year to year until, at the time of his admission, he had several convulsions in one day. At the same time, he underwent a progressive mental deterioration. He was intractable, quarrelsome, irritable, and violent, and was feared by his relatives and neighbors because of his repeated homicidal threats. When he arrived at the hospital, he was completely disoriented, could not recall where he came from, was very restless and excitable and had to be restrained. He was given luminal sodium which he took regularly since December 26, 1923. As a result of this treatment, the epileptic seizures decreased in frequency and in degree of severity, and there was also some change for the better in his mental condition. Yet the convulsions were still frequent enough, and he still displayed that shallow altruism so characteristic of the epileptic disposition. Whenever it was necessary to restrain another patient he obtruded into the scuffle and would attack the attendant. On one occasion a fellow patient, also an epileptic, was disturbed and attacked an attendant, and while the attendant was engaged in

subduing him, Robert attacked him and beat him about the face. On another occasion when the same attendant was speaking to a patient, his back turned to Robert, he attempted to strike the attendant by throwing a heavy tea cup and would have done so had it not been for another employee.

His epileptic seizures now occurred in series and were of the status variety. He would have several of these attacks in a short time and be very disturbed, confused, violent, and dangerous for a period of one or two weeks, requiring restraint and seclusion. He had a great number of hypochondriacal delusions, always demanding and wanting the physician's full attention, at the same time criticizing every order and refusing to take the prescribed medicine. He kept scratching his legs, wished to have them bandaged, yet was very resistive, cursed, and used the obscenest language while his legs were looked after.

On April 26, 1925, when most of the patients were in the chapel and but one attendant left on the ward, with a few inmates too disturbed to be taken to church service, Robert attacked the attendant, saying: "You are alone and single-handed, I am going to clean up on you." During the struggle which ensued in the attendant's attempt to defend himself and subdue the patient, Robert received a complete fracture of the body of the mandible somewhat to the right of the middle line with separation of fragments. The fracture healed within about three weeks, and he now has a normal occlusion.

This injury had a very remarkable effect on the course of the epilepsy. The seizures disappeared completely and never came back, although the patient has received no luminal nor any other medication for more than twenty months. His mental condition changed suddenly on the very day he received the injury. He has been very reasonable since, his conversation is normal, he is a clean, quiet, obedient and co-operative patient who has been working steadily on the hospital farm for almost two years. He is said to be one of the best, faithfulest, and most dependable workers on the farm. There is no trace of unusual irritability or excitability. He gets along splendidly with the employees and his fellow-patients, is free from hypochondriacal ideas, writes very sensible letters to his relatives, is neat in his appearance, and has not caused the least disturbance since April 26, 1925, that is, the day when the injury occurred.

Roasendi reported the case of a young woman who, during an epileptic status sliced off a toe with a painful corn. The hemorrhage very nearly proved fatal, but the epilepsy seemed to be arrested thereafter.

It is, of course, impossible to draw a definite conclusion from these two instances. The fact, however, that in both cases the severe traumatism was followed by complete remissions lasting at least a little more than two years each, deserves to be recorded.



## BOOK NOTICES

**AMERICAN ILLUSTRATED MEDICAL DICTIONARY.** The terms used in Medicine, Surgery, Biology, Dentistry, Pharmacy, Chemistry, Nursing, Veterinary Medicine, and Kindred Branches. Edited by W. A. Newman Dorland, M.D., Member Committee on Nomenclature and Classification of Diseases of American Medical Association. Fourteenth Edition, Revised and Enlarged. Octavo of 1,388 pages, 319 illustrations, 107 in colors, Philadelphia and London: W. B. Saunders Company, 1927. Flexible binding, Plain \$7.00 net; Thumb Index \$7.50 net.

Dorland's American Illustrated Medical Dictionary has reached its fourteenth edition, the last edition following its predecessor in just two years. Many may ask why this dictionary is published so often. The answer is simple. Over two thousand new words knocked within two years at the door demanding entrance. The door was opened, and these words, accompanied by over 110 illustrations, walked into this splendid new book, which is well-nigh indispensable to every medical library, every clinic, and every physician's office attempting to keep pace with medical progress.

The publishers deserve a hearty vote of thanks for the profession for this admirable work.

**TEXT-BOOK ON DISEASES OF THE SKIN AND SYPHILIS.** Designed for the use of students and practitioners. By Albert Strickler, M.D., Professor of Dermatology and Syphilology, Temple University, Department of Medicine; Dermatologist to the Samaritan Hospital; Consulting Dermatologist to the Home for Deaf Children and to the Northeastern Orphans Home; Former Associate in Dermatology and Syphilology, Jefferson Medical College; Former Assistant Dermatologist, Jefferson Hospital, Etc. With 218 Illustrations, Including Six Full-Page Plates, Some in Colors. Philadelphia: F. A. Davis Company, Publishers, 1927.

Text-books on dermatology may be divided into two types: one is the complete one-volume text-book which makes a real effort to supply concise and accurate knowledge on the various diseases of the skin. This type of text-book can be used as a reference. The amount of information contained is practically a minimum, but there are many references so that a student or one looking up a subject has access to a much more extensive literature.

The other type of book on dermatology is the short quiz compend, and is used largely by students in preparing for examinations. It is of little value except for that purpose.

Dr. Strickler's book is neither a quiz compend nor one-volume text. It is not a book that one would care to recommend to students as a text that they might put in their libraries to be used as a reference book. The book is too extensive to be used as a quiz compend. Most of the illustrations are very good, while others have been taken out of focus. Some of the differential diagnosis tables are of value in teaching.

—H. E. MICHELSON, M.D.

**PHYSICAL DIAGNOSIS.** By Richard C. Cabot, M.D., Professor of Medicine in Harvard University, formerly Chief of the West Medical Service at the Massachusetts General Hospital. Ninth edition; 511 pages. New York: Wood & Co., 1927.

Cabot's previous edition on Physical Diagnosis, published in 1923, is so complete and well arranged that it is perhaps difficult to improve on it very much.

This edition, which is the ninth, is as a whole practically the same as his last in 1923, with the exception of a very few changes on heart, pulmonary tuberculosis, and the blood. The most pronounced is the addition of a small chapter on "Soldier's Heart."

Dr. Cabot has had records made by the Columbia Phonograph Co. of heart murmurs to which he refers. These are perhaps very valuable for teaching purposes.

The book is composed of twenty-eight chapters.

Chapter 1 deals with the body as a whole. Chapters 2 and 3 with the head, face, neck, arms, hands, and back. Chapter 4 is on the technic and general diagnosis of the chest. Chapters 5 to 16 deal with the normal and pathological cardiovascular system. Chapters 17 to 20 discuss disease of the lungs and pleural cavity. Chapters 21 and 22, the abdomen, abdominal cavity, and abdominal viscera. Chapter 23, the intestines, spleen, and kidney. Chapter 24, the bladder, rectum, and genital organs. Chapter 25, the legs and feet. Chapter 26, the blood. Chapter 27, the joints, and chapter 28, the nervous system.

The table of contents and index are practically the same with only an occasional minor change, and the addition of "Soldier's Heart." The book has the same number of pages as the 1923 edition, namely, 511.

Cabot perhaps could have made more pronounced changes. He probably could have added something on live subjects, such as hypertension or coronary diseases. The latter seemed to have been almost skipped over.

The book on physical diagnosis is indeed a very valuable one, perhaps one of the best. However, the reviewer does not think there is enough of a difference between the eighth and ninth editions to warrant discarding the old one for the new.

—S. A. WEISMAN, M.D.

**A TEXT-BOOK OF MEDICINE.** By 130 American Authors. Edited by Russell L. Cecil, M.D., Assistant Professor of Clinical Medicine, Cornell University, Medical School, New York. Octavo of 1,500 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1927. Cloth, \$9.00 net.

The title describes this work. It is a very careful and thorough treatise on the diagnosis and treatment of internal diseases. Besides covering diagnosis, prognosis, and prophylaxis in a more thorough and comprehensive manner than the average book on internal medicine it gives very careful directions both as to the general care of diseased conditions and to drug medication. It is a very excellent book and a valuable addition to any medical library.

—WM. W. MOIR, M.D.

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NOVEMBER 15, 1927

## DISEASES OF THE SPINE

We are emboldened to take up this subject although we must present it very superficially and largely on the order of classification.

That there are many injuries to the spine, when studied very carefully, is beyond any question of doubt from what one hears in medical societies and reads in medical books. In the first place, it is necessary to take into account the ordinary pathology that may be found in the spine. The first classification, then, of spinal defects is to be considered as follows:

- Anomalies of the spine.
- Spondylitis.
- Injuries to the spine.
- Static defects.
- New growths.

It would be impossible to consider all the anomalies of the spine, but this gives us an idea of what generally may be expected or must be looked for. Many healers of the spine have sprung up in the last few years, and yet many of its disorders are known to only a limited number of men who make careful *x-ray* pictures of the spine and its anomalies or its possible defects. Those of special interest in relation to trauma are also to be considered:

1. Spina bifida.
  - a. Spina bifida occulta.

2. Supernumerary ribs.
  - a. Cervical.
  - b. Lumbar.
3. Sacralization of the 5th lumbar.

Spina bifida in children is of no special interest in connection with studies of the spine except that it must be given consideration, and that it is commonly seen in the lumbar region. It sometimes does not even weaken the back, and operations performed on it have been reasonably successful. Then someone suggested there was a spina bifida anterior which grew from the body of the vertebra or from disease of the vertebrae and presented itself in the abdomen. Bohart, a Chicago writer, in a recent publication of 420 cases of symptomless spines, reported on his investigation of men who were all either applicants for work on, or employees of, a railroad. They had passed a general physical examination and were ready for employment when a routine *x-ray* examination was made of the spine in each case and 157 variations from the normal were found, of which the following table is an illumination:

Deformities of the transverse processes	6, or 5%
Incomplete union first sacral	9, or 7%
Proliferative changes near articular surface	15, or 13%
Curvatures	8, or 7%
Spina bifida occulta	38, or 33%
Lumbar ribs	39, or 34%
Old fractures of ribs	5, or 4%
Cervical ribs	3, or 2%
Supernumerary vertebrae	10, or 8%
Sacralization of the 5th lumbar	11, or 9%
Variations in the coccyx	5, or 4%
Atrophic changes in interarticular cartilages	3, or 2%
Calcifications in the region of the ureter	2, or 1%
Pulmonary pathology	2, or 1%
Rudimentary 12th rib	2, or 1%
Absence of 12th rib	3, or 2%

This very interesting description of spinal conditions accounts for many of the complaints which are offered to us, not only to the general practitioner but to the specialists. The men reported on the above are employed in switching cars, and in consequence they are in frequent danger of injury. They also show the ordinary anomalies of the spine in the adult that need in no way necessarily weaken the bony structure. Very naturally these are the cases that eventually come to the orthopedist, to the surgeon, and to our basic-science cousins, the osteopaths and the chiropractors. No wonder that so many subluxations of the spine are diag-



nosed by these same men.

The spinal arthritides are an especially interesting group of cases which are classified as follows:

1. Infectious arthritis due to foci.
2. Arthritis deformans.
3. Spinal disease due to specific infection.
  - a. Acute osteomyelitis.
  - b. Tuberculosis.
  - c. Syphilis.
  - d. Gonorrhea.
  - e. Other infections.

No wonder that so many of the diseases of the spine are unrecognized if all these things may occur. No wonder so many are undiagnosed, and, incidentally, no wonder so many are diagnosed.

Among the fractures of the spine one must consider, first, the unrecognized case as shown by a patient who came to a Minneapolis physician and who suffered from a tank striking her in the cervical region while she was sitting on the toilet seat. She got out from under the débris and went about her household duties with a lame back. She did not seek the advice of a physician for one year and was then told there was nothing the matter with her. Then she went to a chiropractor and took a year's treatment, at the end of which time she was completely paralyzed from her neck down. Then a surgeon was called in who investigated the case and found a spicula of bone and two fractured cervical vertebræ,—the cause of her paralysis. She was relieved for a few weeks, but subsequently died of an acute nephritis. This case was unrecognized for more than two years because sufficient investigation had not been made to disclose the actual facts.

Fractures of the spine:

1. Unrecognized.
2. Spinous process.
3. Transverse process.
4. Lamina.
5. Bodies.
  - a. Kummell's disease.
  - b. Crushing injuries.

Consequently, there are many unrecognizable fractures of the spine, and we are in no position to criticize the undiagnosed case in many instances. The spine is an extremely complicated anatomical structure with interlocking processes and overlapping structures, and sometimes even x-ray may fail to disclose breaks in continuity. These various compressed, fractured, or diseased vertebræ may arise from automobile accidents, as well as from train accidents or crushing injuries.

Most of the above material is embodied in a paper by Dr. Arthur W. Ide, read at the Minnesota Academy of Medicine on Wednesday, November ninth. The whole paper will doubtless be published later so that one may see the subject presented more fully.

## MALPRACTICE SUITS

*The American Medical Association Bulletin*, published at the office of the *Journal of the A. M. A.*, contains a very interesting article on the social and economic status of physicians, by Dr. William Allen Pusey, of Chicago, formerly president of the American Medical Association. And in the course of his article he referred to politics and the medical profession. Dr. Pusey questions how far a county or state medical society should go into politics, and he thinks nothing is more disastrous to the influence of physicians than to go in as political partisans, but he adheres to the idea that we should be active and aggressive and as influential as possible for the right in all matters in which an issue is clear-cut. And we who belong to medical societies all know that there must of necessity be some practical medical politics, but it can be done on the right side if we so choose. And it is also admitted that in all medical societies, whether small or large, a few members of an organization must be leaders, not necessarily controllers—for it is very easy for a doctor to assume that there is a certain clique running a medical society, but it is only fair to say that unless a clique or a certain few men did run a medical society it would not run itself. Hence we have our elections, our candidates, and enter into discussions that are largely political in character, as much as possible friendly to be sure; fortunately, the medical profession are not a very abusive lot except on occasions. There are a few men who adhere to their own views, which the majority think is wrong, but, as a rule, medical men are good fighting politicians, but when their politics is settled they are as good friends as ever.

One great difficulty is we do not give our whole and undivided attention to facts and problems, first, because we do not know political methods, and, secondly, because we are either too busy or we are too little interested. The result is that medical societies are sometimes neglected, but it is our duty to accept things as they are and to work for the best things in medicine, not only for the benefit of the profession, but for the benefit of the public.

The one outstanding fault and the great men-

ace to physicians in general is a possible suit for malpractice, and those of us who have been through it will quite readily appreciate the anxiety it causes, as well as the bitterness which may arise in opposing factions. Of course, in the malpractice suits there is always an attorney who is ready and willing to prosecute a doctor for alleged accidents or for real accidents. Thinking that the medical man has sufficient means to stand a malpractice suit, an attorney can readily be found who will undertake it. This is a very serious matter in small towns where a local doctor is called upon to set a broken leg and the result is not good. Perhaps it is due to the fact that the doctor is not competent, but he uses his best skill and effort to do what he can in an emergency case. Then, too, the fact is forgotten that the man in the country who is injured is not able to be transported to some fully competent man, a man who perhaps specializes in surgical procedures and surgical methods. Still further, many patients not only in the country but in the city have many advisors, and it is very common for neighbors, friends, and relatives to find fault with the doctor's methods; and not infrequently, as has been shown in this state by the former Minnesota Medical Defence Organization, surgical dressings have been tampered with, have been removed by over-inquiring people, and they themselves have caused the results which bring about a malpractice suit. The State Medical Association has been able to protect the average physician and not infrequently has saved him a great deal of financial discomfort. Some people sue the doctor for malpractice because they do not want to pay their bill, and they bring up a malpractice suit in order to discourage him from collecting his just reward. No wonder insurance companies have been organized throughout the United States to offer protection to the doctor who is sometimes persecuted. The Medical Protective Company, of Fort Wayne, Indiana, with general offices in Chicago, has perhaps the largest experience in its protective work and offers a safe and sound policy and gives safe and sound advice. Another company issuing group insurance, for instance, to a number of men in a clinic, such as the Etna Insurance Co., insures a large number of doctors, and it is their effort, as well as it is that of the Medical Protective Company, to settle cases whenever possible, thus relieving the doctor of distress, worry, anxiety, and financial loss. These companies express themselves as of the opinion that malpractice actions are usually commenced by reason of the fact that some medical man

has led a litigant or his attorney to believe that the proposed defendant has been negligent in his treatment, and there is a fair prospect of recovery in the contemplated suit. Why medical men should give such aid and influence to the institution of malpractice suits cannot easily be explained. It may be as the result of some jealousy that may exist between the proposed defendant in the malpractice suit and the medical man who encourages the institution of the suit. It is to be hoped that in the future medical men everywhere will be more guarded in the remarks they make, whether intentional or unintentional.

Dr. Pusey goes further than this and says that physicians are practically menaced by malpractice suits more than the members of any other profession. Theoretically, malpractice is chargeable to every vocation, but it is only in medicine that it is an actual menace, and in medicine it is a real menace. He says further: "I do not believe that a medical man should not be responsible for his work, but I do assert that it is an outrageous injustice that his profession alone, of all callings, is harassed unjustly in this responsibility. There is probably no way in which this situation can be quickly changed, because it is a matter of popular tradition and habit, which change slowly. But it is a situation for which the combined profession should constantly use its efforts to get correction, so that it would be placed in the same situation, practically, as every other calling. And it is a matter in which, in individual instances, the profession should use its strongest efforts to see that we are not mulcted. I have hardly ever known a malpractice suit that was justified. They are usually cases of vindictive patients, of lawyers who are not in business for their health, and of doctors who want to satisfy a grudge or a jealousy. These unjust cases of malpractice ought to be met by all the reputable physicians of a community with a solid front of opposition, not only in fighting the individual case, but in using their influence to have the community see the injustice of the persecution, and in creating an atmosphere inhospitable to such persecutions. Malpractice suits cease to be common when the profession, not sporadically, but persistently, takes care of the subject. Unfortunately, this is not done usually until after some unhappy experience has occurred that not only arouses the profession to its duties, but arouses the crowd to the possibilities of successful exploitation of this field."

Every man has to make a living or at least thinks he has to. Consequently, he sometimes



makes mistakes; who does not? The medical men do not intentionally injure a man, but, as a matter of well-known fact, they are trying in every way possible to protect the public. We really, as a profession, have comparatively little respect among the lay people. They look upon us as "easy." They overexaggerate our business and particularly its financial end until we do not know what may happen to us at any time. Somewhere, at some place, there is a man ready to testify against a medical man,—and yet he considers himself a medical man. He forgets that we have different opinions about things, remedies, procedures, and different methods of treatment, some of which are considered always reliable but not infrequently they go out of use; even that takes a long time for the profession to understand,—that medicine has changed materially from decade to decade. A few staple things, like castor oil, calomel, quinine perhaps, and phenacetin, are commonly used, and yet a man might, under some circumstances, do a good deal of harm in administering a dose of castor oil, but very few of the professional people or the lay people would admit it. The public in general, both lay and professional men, forget the enormous time physicians give to their work, the number of poor people whom they take care of, year in and year out, without compensation because they feel it is their duty to relieve the sick and heal the crippled. But no one knows what man is lurking around the corner, waiting for that same doctor to make an error so that he may sue him for malpractice.

## MISCELLANY

### THE SALE OF CHRISTMAS SEALS



The sale of Christmas Seals begins on the day after Thanksgiving and is expected to produce results greater than in any past year, because of the greater interest of the public in the subject and the greater efforts that will be made to meet the needs of the workers.

In Minneapolis alone more than 5,000,000 small Christmas Seals will be placed in the mails by the Hennepin County Tuberculosis Association, and will find themselves guests in the homes of Minneapolis residents.

The Christmas Seals play a dual rôle: they serve as cheerful letter stickers and indicate the spirit

of the movement which they finance. Every person who buys them may feel that he is helping spread the tidings of hope and good cheer to thousands of homes where the disease has entered, and to preserve the happiness of thousands that tuberculosis threatens.

This 20th annual Seal sale marks a milestone in the determined battle against tuberculosis, for the death rate in Minneapolis has been cut in half in the twelve years since 1915 and equally good results have been attained in other cities.

The job is half done! But still one of four of all who die between the ages 15 and 40 is the victim of tuberculosis; its greatest power for harm lies in the fact that it takes young men and women during the years of young parenthood and greatest responsibility.

The most characteristic trait of the disease is the insidiousness of its attack, since it usually becomes entrenched in the body before its symptoms give an alarm of the presence of disease.

Dr. Allen K. Krause, director of the Kenneth Dowes Foundation for Tuberculosis Research at Johns Hopkins University, who visited Minneapolis last spring, urged continuance of the concentrated attack on tuberculosis, now that the disease is on the decline.

"We are in danger now of growing complacent, and feeling that we can let well enough alone," he said. "Disease feeds on complacency. There is no sign that the decline in the death rate is reaching an end."

If ever there was a time to put money and forces into combating tuberculosis it is now when it is on the run, and there is some chance of solution. Every dollar put into the tuberculosis campaign has returned to the country not 10 fold but 100 fold. The Christmas Seal may truly be termed a "Seal of Security."

## NEWS ITEMS

Dr. E. J. Higgins has moved from Mahtomedi, Minn., to Williston, N. D.

Dr. C. F. Clausen has moved from Kimball, S. D., to Williston, N. D.

Dr. Carl Voss, of Hettinger, N. D., has returned from an extended trip to Europe.

Dr. H. C. Anderson has moved from Bismarck, N. D., to Yellowstone Park, Wyo.

Dr. A. F. Branton, of Willmar, accompanied by his wife, has returned from a European trip.

The American Public Health Association will hold its 1928 meeting in St. Paul on June 9 and 10.

The 30-day canvass for funds for Wesley Hospital at Wadena ends to-day and will no doubt be a success.

Dr. J. M. Hayes, of Minneapolis, accompanied by his wife, has returned from a tour of two months in Europe.

Dr. E. A. Anderson, of Fergus Falls, was married to Miss Josephine Anderson, of St. Paul, on November 5.

Dr. Iver Benson, of Montevideo, attended the Clinical Congress of Physiotherapy and other clinics in Chicago last month.

The Silver Bow (Montana) Medical Association entertained the druggists of Butte at a banquet and special meeting last month.

Dr. E. J. Tanquist, of Alexandria, has purchased a residence building on Lake Winona, which he will remodel for use as a hospital.

Examination of nurses for registration in Minnesota will be held on December 8, 9, and 10 in St. Paul, Rochester, Duluth, and Crookston.

Four physicians of Montevideo will advance \$25,000 toward the amount (\$35,000) necessary to complete an addition to the Montevideo Hospital.

Dr. Hubert Miller, of Cande, S. D., has disposed of his practice at that place and gone to Europe for an extended course of postgraduate work.

Dr. R. E. Pray, of Valley City, N. D., is taking a six months' course of postgraduate work in pediatrics at the Children's Hospital of Philadelphia.

Dr. E. P. Quain, of Bismarck, N. D., returned from a short trip to Europe on August 1 so quietly as to be unseen by our news gatherer in North Dakota.

The Western Surgical Association meets in Omaha, Neb., on December 8 and 9. Dr. H. P. Ritchie, of St. Paul, is the Secretary of the Association.

Dr. H. H. Cornfort, who practiced for a number of years in Hot Springs, S. D., and later moved to Dekalb, Ill., died last month while travelling in Europe.

Dr. M. A. Kiefer attended the Clinical Congress of Physical Therapy in Chicago last month and spent some time in the clinics of the Illinois Eye, Ear, Nose, and Throat hospitals.

Dr. J. P. Greaves, of Sherwood, N. D., has moved to Minneapolis. Dr. Greaves had practiced over ten years in Sherwood, and upon his

departure was given a farewell reception by the citizens of that place.

The Women's Relief Corps and the Twentieth Century Club of Devils Lake each furnished a room in the Children's Convalescent Cottage at the State Tuberculosis Sanatorium at San Haven, opened last month.

Dr. G. W. Dahlquist has resigned his position as Chief Medical Examiner of the Veterans' Bureau at Fargo, N. D., after four years service, and resumed his practice at Lancaster, Minn., where he had practiced sixteen years.

At the November meeting of the Huron (S. D.) Medical Society the speakers were Dr. D. A. Gregory, of Miller; Dr. M. E. Cogswell, of Wolsey; and Dr. E. B. Taylor, of Huron. Dinner was served in the Marvin Hughitt Hotel.

Dr. Frederick Brendemuhle, a very early pioneer physician of North Dakota, died last month in Fargo at the age of 86. He was a graduate of the General Medical College of Chicago in the class of '65, and began practice in Moorhead in 1883.

The Minneapolis Surgical Society held its regular monthly meeting on November 3, at the home of the president, Dr. H. B. Sweetser. Dr. R. E. Farr read a paper on "A Simple Aseptic Hemostatic Method of Inverting the Appendix Stump, with Lantern Slides."

The divisional meeting of the American College of Surgeons for Minnesota, North Dakota, and Manitoba will be held in Duluth this week on the 17th and 18th of the month. A public meeting on public health will be held on Friday evening at the Shrine auditorium.

At the annual meeting of the Wright County (Minnesota) Medical Society, held at Buffalo, on October 27, the following were elected officers: President, Dr. E. Klaveness, Monticello; vice-president, Dr. O. L. Peterson, Cokato; secretary-treasurer, Dr. J. J. Catlin, Buffalo.

The City Hospitals (Ancker, of St. Paul, and the General, of Minneapolis) made contrasting records in October. The number of patients in Ancker was much smaller in October, 1927, than in October, 1926, while in the Minneapolis General Hospital the reverse condition prevailed, and a large waiting list presents a difficult problem.

The annual memorial meeting of the Hennepin County (Minnesota) Medical Society was held on November 2. Gov. Theodore Christian-



son made an address, and biographical sketches of the members who died in the past year were given. The deceased members were Drs. William R. Murray, Amos W. Abbott, Frederic J. Souba, Robert S. Brown, and Arthur L. Travis.

*The Pennant*, the journal of the North Dakota Tuberculosis Association, gives an exterior and several interior views of the Children's Pavilion at the State Tuberculosis Sanatorium, at San Haven. It is a handsome and useful structure, built by the State at a cost of \$75,000, with a capacity of fifty patients. Its work will be that of a preventorium, as well as a sanatorium.

Dr. John A. McCuen, of Duluth, died on November 4 at the age of 63. Dr. McCuen graduated from the University of Toronto, class of '91. He began practice in Duluth the following year, and soon became active in civic affairs. He was coroner of St. Louis County for several years and mayor of Duluth for one year. He was a member of many fraternal organizations.

Dr. Edward M. Clay, of Hutchinson, died on November 2 at the age of 61. Dr. Clay was a graduate of the College of Physicians and Surgeons of Minneapolis, class of '93, and soon after graduation began practice in Renville, where he remained for about thirty years, and had practiced in Olivia during the past two years. He went to Olivia to attend the funeral of a friend, and dropped dead as he left the train at Olivia.

Dr. Reuben D. Zimbeck, of Maynard, died on November 2 at the age of 70. Dr. Zimbeck was born in Wisconsin of a pioneer family, and after graduating from Rush, in the class of '57, began practice in Minnesota at Morton in 1886. He moved to Montevideo in 1890, where he remained until 1915, when he moved to Maynard, where he remained until his death. Dr. Zimbeck was prominent in medical and civic matters during his entire professional life. He was health officer at Montevideo for fifteen years, county coroner for twelve years, and a member of the city council for several years.

#### **The Sixth District (N. D.) Medical Society**

The meeting was opened at 8 p. m., on October 11, with a dinner at the Patterson Hotel, Bismarck, N. D., during which time Dr. Griebenow discussed the Tunney-Dempsey fight in the light of his personal reminiscences of the affair. The meeting was then called to order and the minutes of the previous meeting read and approved.

Clinical case reports:

Dr. Pierce gave a case report of a carcinoma of the bladder, with death one year after the appearance

of hematuria. Dr. Constans discussed the case from the standpoint of the rapid development of papilledema. The pathology was discussed by Dr. Larson with lantern slide demonstration.

Dr. Waldschmidt reported a case of tuberculosis of the kidney, showing the specimen.

Dr. Quain reported a case of rupture of the uterus which occurred after four hours of labor. Pituitrin was not used. He also discussed a similar case which occurred eight years ago.

Major Lovewell, of Ft. Lincoln, gave a short talk on the subject of "Our brother doctor and why we should treat him like a human being."

Dr. Ramstad gave a report of the proceedings of the recent meeting of the College of Surgeons held at Detroit, Mich.

The principal paper of the evening was presented by Dr. Angus L. Cameron, of Minot, N. D. on the subject, "Primary Carcinoma of the Submaxillary Gland, with the report of two cases and reviews of the literature."

This was a very interesting paper and gave abundant evidence of many hours of tedious labor on the part of the reader.

Dr. G. M. Constans' transfer to this Society from the Ramsey County Medical Society of Minnesota was accepted.

Dr. P. F. Rasmusson, of Beulah, N. D., presented his application for membership and was passed by the Board of Censors to be voted on at the next meeting.

R. W. HENDERSON, M.D.  
Secretary

#### **Annual Meeting of the West Central (Minnesota) Medical Society**

The West Central Minnesota Medical Society held its annual meeting at Morris, October 12, 1927. The members of the Society and their ladies were the guests of Drs. Caine, Cumming, Fitzgerald, Leuty, and Ransom at a six o'clock dinner.

Dr. C. F. Ewing, of Wheaton, addressed the Society on the subject of postgraduate work and medical economics. A general discussion followed.

The election of officers for the year 1928 resulted as follows: President, Dr. J. T. Leland, Herman; vice-president, Dr. L. M. Ransom, Hancock; secretary-treasurer, Dr. H. Linde, Cyrus; delegate to State Convention, Dr. C. F. Ewing, Wheaton; director for relief in disaster, Dr. C. I. Oliver, Graceville.

The ladies of the Society organized an auxiliary at Mrs. E. T. Fitzgerald's home, and everybody had an enjoyable time.

H. LINDE, M.D.  
Secretary

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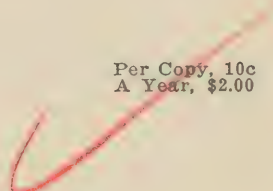
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## MITRAL STENOSIS\*

By W. G. RICHARDS, M.D.

BILLINGS, MONTANA

Of the various aspects which heart disease may assume no one presents more difficulties than mitral stenosis. Oftentimes indefinite as to its etiology and confusing in its symptomatology, it is a clinical problem and a diagnostic puzzle. It is a fruitful source of disagreement between doctors and not seldom a disappointment to the therapist. Frequently occurring in early life, its recognition is then of the utmost importance in determining the choice of an occupation which will be within the capacity of the subject, for if this is not rightly made a cardiac breakdown, in all probability, will occur at a period in early adult life when responsibilities are greatest and readjustment the most difficult. It is nothing less than a tragedy when a young man who has chosen a laborious occupation and assumed the obligations of a wife and small children finds himself unable to continue his work on account of his heart, or when a young woman breaks down under the strain of wifehood and motherhood, though, unfortunately, as frequently the stenosis does not develop until some time after the acute infection, it is not always possible to prevent this.

The condition of narrowing of the mitral valve which is called mitral stenosis, is in most cases

produced by an antecedent endocarditis affecting the valve structures. These become studded with excrescences or vegetations, which may break down and ulcerate. As the acute process subsides and the lesions heal the valve cusps become distorted and the aperture contracted until, in some cases, nothing but a narrow slit is left,—a veritable button-hole,—through which blood is forced only with the greatest difficulty.

The most frequent cause of the preceding endocarditis is acute inflammatory rheumatism and its associated diseases, chorea and tonsillitis. However, any general infection may initiate the process, and with the successive waves of influenza which have swept over the world the last few years, with its known effects upon the heart, this should be kept in mind as a possible cause, for, though influenza is more likely to affect the muscles than the valves, one sees cases where this seems to be the only etiological factor of which a history can be elicited. Occurring in later life, it may be a part of a general arteriosclerosis<sup>1</sup>. Meleney and Kellers<sup>2</sup> state that, though mitral stenosis is common in China, rheumatic fever is rare, which is interesting as showing either the frequency of causes other than rheumatic, or the tendency of the rheumatic virus to attack the heart valves even when, for some reason, the joints are invulnerable. In

\*Presented at the Midland Empire Clinical Conference, Billings, Montana, March 25, 1927.

many cases no cause can be ascertained, but when one remembers the shortness of memory of many people for their diseases, especially the minor infections, this is not surprising.

There is nothing characteristic about the symptoms complained of by the patient. These are those of cardiac disease in general. Often, indeed, the patient will go for years with apparently no limitation of his activities, especially if his occupation is a sedentary one, and the milder non-progressive forms are not incompatible with a long life and a considerable amount of activity. The average individual, however, is not mindful of slight degrees of breathlessness, and when he does notice them he is very apt to ascribe them to some cause other than the heart: he has been smoking too much, he takes too little exercise, he eats too much, anything, in fact, rather than lay the blame upon the heart. Usually, except of course in the later stages, the person who takes most notice of his heart and is full of complaints about it has not much wrong with it. Two cases illustrating this come to my mind: the one, with an apex reaching to the anterior axillary line, who was spending his noon hours at a gymnasium, and wondering why it was that in spite of his efforts at training his wind did not improve; and the other, who goes about in daily and hourly fear of a cessation of cardiac activities, but who can and does outwalk me any day we go out together.

As in other forms of heart disease the patient is as likely to consult the doctor on account of his stomach as on account of anything else. He has pain or distress after eating, he is troubled with "gas," and has often been dieting himself or imbibing some fearful and wonderful combination of the digestive ferments, embracing in one nostrum, with a convenient disregard of their mutual incompatibilities, all the active principles of the glands of the alimentary tract from the mouth to the anus. Or a cough and sputum, or even an hemoptysis, may arouse in the minds both of himself and his medical attendant the fear of tuberculosis. Hemoptysis, indeed, is by no means uncommon.

To these may be added attacks of giddiness, headache, palpitation, and tachycardia, or a chronic hoarseness, tempting specialist treatment for laryngitis, but due to the irritation of the recurrent laryngeal nerve from a dilated auricular appendage.

The appearance of the patient is suggestive, often, indeed, giving the key to the diagnosis. This, however, is not as true in these days as it was before the vogue of paint and powder.

One has to be very careful now about drawing conclusions from the color of the face. Not only may the signs of mitral stenosis be disguised or hidden, but quite frequently one finds a woman "made up" to resemble them exactly. The characteristic feature is a congestion of the lips or cheeks or ears. It may be "a dusky malar flush, with a tendency to cyanosis of the lips and mucous membranes,"<sup>3</sup> or "a bluish floridity of cheeks and lips, with slight yellow tint between,"<sup>4</sup> or "frequently the facial aspect is one of profound anemia, in spite of the invariable abnormally deepened tint of the lips."<sup>3</sup> The hands also may be bluish, though if one examines the hands of all one's office patients he will find some degree of cyanosis is quite common, especially in the subjects of so-called neuro-circulatory asthenia. Clubbing of the fingers may also be present.

In certain cases the general nutrition is interfered with, and there is considerable wasting. This is particularly true of children. Still says: "It is no uncommon thing for a child to be brought for medical advice simply on account of wasting, by a mother who has no suspicion that the child has ever had rheumatism or has any affection of the heart, although examination reveals advanced cardiac disease, and on inquiry there is a history of vague pains in the limbs for many months past."<sup>5</sup> Frequently the suspicion is aroused of tuberculosis, and when examination reveals also mucous râles in the chest and possibly a slight rise of temperature a diagnosis of tuberculosis is sometimes made. In fact, every tuberculosis sanitarium has a percentage of mitral stenosis cases among those sent to it.

Physical examination of the chest will reveal, of course, varying conditions according to the degree of disability. If the obstruction is not marked, and no great effort is required on the part of the auricle to expel its contents, little, if anything, will be noticed on inspection, but where greater efforts are required one will see wider areas of pulsation on the walls of the chest and distension and abnormal pulsations in the cervical vessels. However, one should always remember that a patient consulting a doctor for the first time, particularly about his heart, is liable to be in a state of considerable mental anxiety, and therefore to have an overacting heart, which will be evident in increased pulsations of the chest wall, especially in thin persons.

Determination of the size of the heart will often fail to reveal any enlargement. If one remembers that a narrowing of the mitral ring



prevents the delivery of much blood to the left ventricle one will not wonder at this. If little blood goes to the ventricle there will be no hypertrophy of its muscles and no dilatation. Therefore the typical heart of an uncomplicated mitral stenosis is a comparatively small heart. Enlargement of the left auricle there will probably be, but this is not readily detectable by percussion. It may be exhibited by *x*-ray examination, the left border showing an absence of the usual auricular curve, the normal convexities being fused into an almost straight line. Often one finds an enlargement of the heart to the right.

On palpating the chest wall one feels for the thrill. This is a fine vibratory sensation felt in the region of the apex beat, generally just inside it, immediately preceding and leading up to the systolic forward impulse. Its importance lies in the fact that it is presystolic, and it must be distinguished from a somewhat similar sensation felt over violently acting hearts at the time of systole. I confess my own difficulty in appreciating some of these at times, and in these cases I resort to a Mackenzie polygraph tracing taken around the apex beat. This often shows a series of very fine waves leading up to the summit of the curve.

It is, however, on auscultation that we find the most definite evidence of mitral stenosis. Though we undoubtedly owe a debt to Sir James Mackenzie for debasing the mere murmur from its high place in the diagnosis of heart affections, in this case the murmur is all important, for it is typical, and without it, though one may suspect it, one is hardly justified in positively diagnosing mitral stenosis. It is presystolic in time, of a rough, rolling, or rumbling quality, increasing in intensity like a crescendo movement in music, and ending in the loud snap of the much accentuated first sound. Of course, not all cases present it to the same degree, for there are differences in the extent and character of the stenosis. A short crescendo murmur or only an accentuated first sound is heard in a slight stenosis which offers slight resistance to the inflow of blood. Sometimes it must be brought out by exercise, which should always be done in doubtful cases. Its location is usually just within the apex beat, and it is of very limited transmission around. The second pulmonary sound is also accentuated or reduplicated, and we may have, besides, murmurs occupying any part of diastole, while to these may quite frequently be added the systolic murmur of an associated regurgitation, making indeed a veritable band of music, which may require considerable study before the component

parts can be satisfactorily distinguished and identified. Much ingenuity has been exercised in describing the murmur of mitral stenosis at different stages of the disease, and the accompanying heart sounds, but if one will remember the "rumble and snap" characteristics, one will probably make as few mistakes in the diagnosis of mitral stenosis as it is possible to do.

However, one should always bear in mind Cabot's caution about drawing conclusions regarding apical presystolic murmurs with enlarged hearts. He says: "I have found it best systematically to disregard all presystolic murmurs heard at the apex of a markedly enlarged heart, unless the case has been under observation long enough for us to have recorded the murmur before the heart became enlarged or unless we have a clear history of a long-standing infectious process, presumably involving the heart valves."<sup>6</sup>

When the rhythm becomes disordered by the establishment of auricular fibrillation the presystolic murmur disappears, although a diastolic may continue. This form of arrhythmia is quite common in mitral stenosis. It arises from the fact that the mitral valve is situated quite close to the conduction tissues, and as the sclerosis of the structures making up the valve progresses these tissues also become sclerosed and the regular conduction of the cardiac impulse is interfered with. Auricular fibrillation can usually be recognized without the aid of instrumental means. In fact, in these days of multiplication of instruments one would do well to remember Mackenzie's comment that the best use of these instruments, including his own polygraph, is to teach one to do without them. There is no order about this rhythm at all. It is a perfect riot. Instead of the beats occurring at regular intervals or being interrupted by an occasional irregularity, the pauses between them are of all lengths or any length, short following short, or long long, or long and short following each other. The beats may also be irregular in force. One does not always have the regular sequence one obtains in premature systoles,—long pause, big beat,—short pause, little beat,—but the size of the beat may have no relation to the preceding pause. In fact in no way is there a regular sequence about this pulse at all; it is, indeed, a "perpetually irregular pulse."

In considering the treatment of mitral stenosis it is important to remember that there is no treatment for mitral stenosis *per se*. We are powerless to stop the progress of the stenotic process. Neither can we remedy the distortion of the

mitral valve when it has occurred. Possibly in the future practical methods of surgical orthopedics upon the heart valves may be devised, but at present these are only in the experimental stage. We may hope for these as many of us hope for salvation,—without any great confidence that our desires will be realized. As long as the heart can successfully overcome its handicap no treatment at all is needed, but, paradoxically, this is the time when the doctor is of most value. In no disease is there a greater field for the physician in the rôle of guide and counsellor, and to efficiently fulfill this function he will need, not only a knowledge of cardiology, but sound common sense and a broad outlook on life. There is no place here for the man who interprets all cardiac disease in terms of teeth and tonsils, and whose main idea of treatment is the administration of some form of digitalis.

To advise concerning the character of occupation, amount of exercise, or extent of social activities, requires a nice appreciation of the heart pathology and degree of disability. To permit too much activity, sooner or later, will be disastrous. To make the patient a chronic invalid unnecessarily, afraid to take a step lest his heart should stop beating, is equally disastrous. Even the best advice, however, will often be as ineffectual as the proverbial water on the duck's back. If the unfortunate possessor of the bad heart also possesses a bad brain his fate is sealed. If his economic condition is such that he must drag on in the effort to take care of himself and family, his fate is sealed also. A poor brain and a poor pocket-book are equally to be avoided by the victim of mitral stenosis.

But given the ability and the willingness to live within his limitations the patient may have years of usefulness. He should be guarded against a recurrence of acute rheumatism, but, unfortunately, in the present state of our knowledge we are not very sure as to the methods by which this can be done. It is all right to remove infected tonsils or other infected foci, but this does not always have the desired effect. It is hopeless to expect to remove all possible sources of infection, for with all our efforts we cannot sterilize either the upper respiratory or the alimentary tract. We need more knowledge as to how to enable a person to live in peace and amity with the bugs which, like the poor, he will always have with him. In fact, any campaign for the prevention of heart disease will lack really intelligent direction until we are more sure of our ground, and it is much to be regretted that such unfounded statements should be publicly

made by responsible individuals as that "90 per cent of heart disease is caused by diseased teeth," recently made by a prominent dentist. We may sententiously warn our patients, too, against chilling and getting their feet wet, tell them to wear flannels (red ones, preferably!), and such things, but this is a counsel of perfection impossible to carry out unless one retires from the world and its activities. After all, a common sense method of living is the best recommendation we can give, and beyond that we have not much to offer unless it is our prayers and the value of these must be left to your individual judgment and sense of personal worth.

When the heart fails, rest, of course, is indicated. The treatment of this is the usual treatment for cardiac failure, so-called failure of compensation, and I need not go into this here. The books are full of it. With the onset of auricular fibrillation digitalis will be our sheet anchor. But give enough. It is very nice to calculate the required dose according to the patient's weight and that sort of thing, but the weakness of these methods is that one cannot be sure as to how much is absorbed, even if we assume that everybody's susceptibility to digitalis is equal. Thirty minims every four hours until I begin to get effects is my own most usual method, but it is not good to have a routine. One should treat each patient on his own merits and increase or decrease according to his needs. Let it be a good tincture, however, not one which has stood on the druggist's shelves since he first opened shop, and if it is standardized according to the pharmacopea requirements that is good enough for me. Pretty nearly every pharmaceutical house has some pet preparation of digitalis of its own, but those I have tried have not seemed to have had any particular advantage, except that to the maker of the greater price. But do not give it by the drop method. Every writer on digitalis has pointed out the difference between drops and minims, but still one sees it measured out by drops. Verily are we a conservative profession.

When the patient is again on his feet teach him how to administer digitalis himself. He will need it as long as his auricles are fibrillating, and will have to learn to regulate his dose according to his present needs. There are very few who cannot learn to do this, and most people will see the advantage in so doing when they realize it means fewer visits to the doctor, and therefore more shekels for the less necessary but more pleasant things of life. But persuade him to visit you occasionally. We all get weary in well



doing, and confession will be good for him at times, whether he belongs to the Knights of Columbus or the Ku Klux Klan. It will keep him up to the scratch, and may avoid the always imminent breakdown. In fact, a little intelligent supervision may add years to his life.

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## PEDIATRIC CLINIC\*

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(The patients presented in this clinic were furnished and their histories given by Dr. W. H. Saxton, of Huron S. D.—The Editor.)

**History:** This baby is five months old. First seen January 6, 1927, at five weeks of age, with complaint that the baby did not gain consistently. Delivery was normal, and the baby was nursed for six days, when, because of insufficiency of breast milk, supplemental feeding of S. M. A. was given. The baby progressed normally for one month when the weight became stationary. When the S. M. A. was increased he responded with diarrhea. He was then put on skimmed lactic acid milk, but because of aggravation of the diarrhea the feeding was changed to Protein S. M. A. with good results.

At this time the baby contracted bronchopneumonia, followed by a suppurative cervical adenitis and stomatitis. Since the onsets of these troubles, he has been on a variety of feedings including protein milk, S. M. A., lactic-acid milk, and finally diluted goat's milk. On each of these foods the baby did well for a time, but eventually responded with a diarrhea. At present the baby has a stomatitis and shows a diarrhea with loss of weight.

**DR. RODDA:** Dr. Saxton has collected for us five interesting cases with well-prepared histories, physical findings, and notes. With limited time we shall have to discuss them very briefly.

On physical examination one finds the child undernourished, and otherwise negative. There are no findings of rickets, which might be expected here. We now know that rickets accompanies growth. Be the feeding history ever so bad, you will find no rickets unless the bone growth is rapid. Such has not been the case with this child.

We were formerly taught that if a baby did not thrive on a reasonable feeding formula, then that particular feeding was unsuitable for that particular child. Then began a long search for particular food for the baby in question, often with disastrous results. More often the trouble will be found with the baby, rather than with the food. Some babies, for instance, when

given cow's milk, will respond with vomiting, diarrhea, collapse, angioneurotic edema, or even convulsions. They respond promptly and with minute amounts of the food, they are truly anaphylactic. From the history we can say this is not such a case.

One of the greatest contributions to successful infant feeding was the finding that infections outside the digestive tract (so-called parenteral) may cause diarrhea, irrespective of what the feeding may be, even with breast feeding. It was an old clinical observation that the infant with pneumonia was likely to have a diarrhea, but the cause was sought for in the food rather than in the disease. However, the source of infection is not always as patent as in pneumonia. We are indebted to Marriott for demonstrating to us that hidden infections, such as in the middle ear, mastoid, accessory nasal sinuses, or a pyelitis, may be the cause of persistent or recurrent attacks of diarrhea.

This baby has had bronchopneumonia, stomatitis, and abscesses of the cervical glands, obvious and ample causes for the diarrhea. This baby has been well treated; it has had food. Too often these patients are held on a starvation diet to cure the diarrhea. This is bad treatment. An adult may fast for a surprisingly long time. Not so with an infant. It must have food in large amounts or it will die in a surprisingly short time. My impressions are that, if Dr. Saxton will keep on feeding this baby any of the mixtures which he has employed until these infections are overcome, the baby will then thrive on any reasonable food if given in sufficient amounts.

Second case:

**History:** The presenting symptom in this case is vomiting. The baby is four months old. Parents are living and well; a sister and brother are well. Birth was normal, breast fed fourteen days, then put on a simple milk formula because of failure of maternal food supply. On this feeding the

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infant began to regurgitate after each feeding. As he grew older, in spite of various adjustments in type and interval of feedings, the vomiting grew worse. There was much crying, not relieved by enemata and heat. After two weeks of these symptoms, the baby was put on thick cereal feeding and atropin with almost instantaneous relief from vomiting, followed by a rapid gain in weight.

DR. RODDA: The outstanding symptom in this case is vomiting. The baby is in good nutrition, with clear skin, and normal findings throughout. All babies vomit occasionally; it is a kindly provision of nature to afford relief if an infant gets too much of a proper food or an unsuitable food. The ease with which regurgitation is accomplished depends upon a low tonus of the cardia of the stomach. Severe degrees and persistence of vomiting, however, may be the result of excessive tonus or obstruction at the pyloric end of the stomach. Now, vomiting may be one of several degrees. Some babies vomit all liquids given them from the first hours of life. These are cases of atresia along the intestinal tract. Death results in a few days from starvation. We, however, are discussing older infants and may consider the problem under four degrees. First degree: The infant which occasionally vomits large amounts of food, requires no treatment other than a reduction of the amount taken. Second degree: Infants who take large amounts of food and vomit frequently, "habitual vomiters." As a rule the stools are normal and the infant thrives; treatment is usually unnecessary and ineffectual. The vomiting ceases when solids make up the main portion of the diet. Third degree: The infant which vomits most of its food. So much food is lost that the baby becomes constipated, dehydrated, and loses greatly in weight. Obviously, something must be done, or starvation will result. We are here dealing with a spasm of the pylorus, such that food cannot get through. I assume such is the case here presented, because the history is suggestive and a rational treatment resulted in a prompt cure. What is the treatment? The employment of atropin to relieve spasm of the pyloric musculature. Sometimes enormous doses of the drug are required to accomplish this. Haas has given a month-old infant as much as 1/16 of a grain of atropin in twenty-four hours. The effective dose must be worked out with each infant individually. Secondly: To mechanically aid the infant, give a thick cereal mixture containing proper food elements in sufficient amounts, such as Sauer's formula. It is easier for the baby to extrude a liquid than a sticky mixture such as cereal cooked

in milk. Fourth: Such vomiters as do not respond to the above treatment, are cases of true obstruction at the pylorus, pyloric stenosis. The treatment in these cases is surgery, promptly called for and intelligently applied.

#### Third case:

History: Baby four months of age. Was seen first at five weeks of age with complaint of constipation and failure to gain though it nursed well. After determining that there was practically no breast milk, it was placed on a simple cow's milk formula. It was seen again five weeks later, during which time the baby had gained only 140 gms. and was vomiting. However, in the meantime, numerous feedings had been used. At the second visit the feeding was changed to lactic-acid milk, and the baby has gained consistently since.

DR. RODDA: This baby is now in good condition with no acute disturbance. I take this to be a simple feeding case. Had the baby been under careful supervision from birth, it might have been possible to maintain breast feeding, at least in part. But on the first visit there was little or no breast milk, and, very properly, the baby was given food. The mother, however, did not stick to the formula and made many changes in the diet in the course of five weeks. Doctors often do the same, most often because there is not an immediate and striking gain in weight. Any young infant which presents a disturbed feeding history when put on an ideal feeding schedule, will not gain for several days. Czerny describes it as a period of repair. If the baby is getting sufficient calories, is digesting the food, and is contented, stick to the feeding, eventually the gain will follow. Too often, as in this case, impatience leads to the use of numerous and often bizarre mixtures. Often this results in a lowered tolerance for all food, and a real feeding problem results.

Given a normal baby, what food shall be selected? That is often a personal equation. As far as a baby is concerned, 99 babies out of 100 will thrive on any reasonable food. As to the physician, familiarity with a method will often determine its selection. We must remember that infant feeding has vogues. For instance, buttermilk mixture was popular the middle of the last century. It was revived again at the beginning of this century. Lactic-acid milk feeding is the vogue at present. It is a most excellent food and easily prepared. In the digestion of sweet milk more acid is required for digestion than some infants can furnish. The lactic acid then acts as a complement to the deficient hydrochloric acid. Most babies, however, will thrive on a simple milk mixture pro-



vided it contains enough calories. Von Pirquet has fed whole cow's milk, fortified with as high as 17 per cent sugar, to new-borns with success. Such concentrated food is rarely necessary. But we should get away from the old slop feedings of  $\frac{1}{4}$  milk plus  $\frac{3}{4}$  water with a pinch of sugar in doses of 1 or 2 ounces. Give the baby enough of any commonly employed baby food, in reasonable concentration, add orange juice and cod-liver oil, and the vast majority of babies will thrive.

#### Fourth case:

History: This baby, eleven months of age is presented because he is not gaining in weight, eats but little, is sleepless, and has great difficulty in breathing. Mother thinks he has pain in the head. He was a full-term, normal new-born, nursed for four months. He was weaned onto a half milk and half water mixture, with no sugar. Shortly he was given a cereal milk mixture, thickened with flour. His condition at nine months of age satisfied the mother with the exception of his failure to sit alone. He was taken to a bone-setter who found three vertebræ out of place and adjusted them. A few days later he developed measles in very severe form. Since convalescence from measles there have been two attacks of high temperature accompanied with rapid breathing, presumably pneumonia.

DR. RODDA: This baby at eleven months weighs thirteen pounds, about the average weight of a normal infant at four months. The skin, especially over the inner thighs, lies in great folds as an expression of extreme and rapid emaciation. There is great difficulty in breathing and evidence of obstruction in the upper respiratory tract. The presence of a rosary and a Harrison's groove are evidences of rickets. The baby is very ill and in serious condition.

A history of measles six weeks ago, followed by two attacks of pneumonia and such rapid emaciation, would call to mind first the possibility of acute tuberculosis. An *x*-ray study with the outcome of the von Pirquet tuberculin reaction, should prove or disprove this assumption. If it is not tuberculosis, the *x*-ray study may reveal some other pathology within the chest. If, however, the *x*-ray findings are negative, the poor nutrition may be explained by the recent acute infection and the respiratory difficulty can be charged to obstruction by hypertrophied tonsils and adenoids. If by good feeding and hygiene the baby can be gotten into better shape, the adenoids and tonsils should be removed. But objection might be raised that the child is too young for such therapy, and the question might be asked, at what age should tonsils and adenoids be removed? The answer, whenever they cause trouble. It is true more brilliant results are obtained when their removal

is delayed until the age of six years or later, and sometimes when they are left alone. However, if they cause symptoms as a site of focal infection or cause obstruction to normal breathing, they should be removed irrespective of the age of the patient.

#### Fifth case:

History: This baby, six months of age, was delivered normally and artificially fed on a variety of foods, including Horlick's food, Mellen's food, lactic-acid milk, and simple milk mixtures. The baby did not do well, following a cold infection in December. Some time ago, the mother noted that the baby was always bathed in perspiration, was very fussy, was sensitive to light and all food had to be forced. Then a rash appeared all over the body. A diagnosis of acrodynia is made.

DR. RODDA: We think the diagnosis of acrodynia can be confirmed. What is acrodynia? An old disease rediscovered, the name meaning painful extremities. It has a typical history and symptom complex and occurs in infants and young children. Usually some weeks following an upper respiratory infection the mother notes the child's extreme irritability. This is followed by anorexia, weakness, excessive perspiration and photophobia; a peculiar swelling, coldness and redness of fingers and toes, and a generalized miliaria. The child apparently has pain, buries its head in the pillow, sleeps but little and whines continuously. Our case fits into the picture well. But this is a mild case and fairly acute. More severe and chronic cases show the above symptoms much exaggerated and in addition the hair may be pulled out, teeth become loosened, ulceration of the skin occurs and emaciation becomes extreme. Older children complain of tingling, and burning pains in the fingers and toes of such degree as to cause constant rubbing and biting of the extremities. We have seen the tips of fingers and toes actually bitten off. Emaciation is extreme and death may ensue from exhaustion. The outstanding pathology is probably a polyneuritis. There is much speculation as to cause. It is our belief that the cause is an intoxication from a focal infection in tonsils and adenoids and the paranasal sinuses. The removal of the focus of infection with general supportive treatment in our recent cases has given good results with convalescence measured in terms of weeks. Our earlier cases treated by diet and hygiene alone required months or years for recovery. In this case we would recommend removal of tonsils and adenoids, washing out the maxillary sinuses, if indicated, a full diet, and cod-liver oil. We would anticipate complete recovery in four to eight weeks.

## TRACHOMA\*

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I realize that not as many are interested in trachoma as in many other diseases which are more spectacular in their behavior, but trachoma does represent a very large problem in certain sections of the United States, as it does in many foreign countries. I shall not attempt to indicate the distribution throughout the world as you are doubtless familiar with it. In this country we have several endemic foci of trachoma, the chief one being in the southern mountains of Kentucky, Tennessee, West Virginia, and Virginia. Inasmuch as the states of Missouri and Arkansas were largely settled by persons from Tennessee, Virginia, and Kentucky we have in these states the same type of people, of almost pure Anglo-Saxon stock, and also afflicted with trachoma. Many counties in these states have no person of foreign birth, and the disease is most prevalent among the inhabitants who are of Anglo-Saxon ancestry. This has not been brought in by any admixture of population from without, and must have been endemic from the time these individuals, chiefly of English and Scotch-Irish blood, settled there.

We have in other sections of the country the foci, as we have in Minnesota and doubtless in North Dakota, among individuals who are first or second generation Americans. The immigration law has prohibited people with trachoma entering the country for the last twenty-eight years.

The State of Missouri has a pension law for those who are blind, and practically one-fifth of those pensioners were made blind by trachoma. It is the leading cause of blindness in that state. That is the only state in which we have such accurate figures, but doubtless the same percentage obtains in other sections where trachoma prevails. These pensions for trachoma blind cost the State of Missouri over \$265,000.00 annually. These pensioners are so blind that they have only light perception. A person may see a good deal more than this and still be unable to make his own living and be a liability to his community.

The disease manifests itself in two main forms, the follicular and the papillary, the follicular having the characteristic follicles which

you see pictured in the typical cases of trachoma. The papillary type is the acute type in which the conjunctiva of the lid presents an appearance somewhat like a reddened tongue, but I am convinced that there is no pure papillary type of trachoma. With a magnifying lens you will usually see the follicles in the lids, even in the papillary type. After treating these cases for a few days the papillæ subside, and you can see the follicles. This is probably a superadded infection which presents the papillary appearance on the true granular or follicular trachoma.

The process of Nature in dealing with this disease is the formation of fibrous tissue, which cuts off the follicles from the circulation so that they atrophy. The end-result of the untreated case of trachoma is the production of a considerable amount of scar tissue in the lid. Besides the manifestation of the disease in the lid we have the manifestations in the cornea, namely, pannus, corneal opacities, and ulcers. I am convinced that the pannus and the opacities of the cornea represent not merely the irritation caused by the scratching of the roughened lid on the cornea, but that it is a real trachoma of the cornea.

The same disease which we have in the conjunctiva I think we have reflected in the cornea. With magnification we can see what resembles trachoma follicles in the cornea. So we have in the cornea pannus, opacity, and breaking down of the cornea into ulcers, which may or may not be infected. Some are perfectly sterile ulcers, while in others we find pneumococci and other infecting organisms.

As to the diagnosis: This is the main point of contention in trachoma, and we have a few points which, I think, are fairly well settled. The main stumbling block is the presence in a good many eyes of folliculosis, or follicular conjunctivitis. In folliculosis we have almost the same thing, except that we have the follicles superimposed on the conjunctiva, while in trachoma the follicles are infiltrated underneath the conjunctiva.

I often draw the analogy as between smallpox and chickenpox: in trachoma we have the follicle imbedded underneath the conjunctiva, and in folliculosis we have it resting on the con-

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junctiva without the thickened base beneath it. The same as in smallpox there is the induration beneath the skin, while in chickenpox it rests on the skin. I think this is a singularly apt comparison. You will see numbers of follicles that are transparent, with no congestion.

The typical trachoma color is another point of differentiation. It is a sort of mulberry, or raspberry, or reddish-purplish color that is hard to describe, but it occurs in trachoma and not in folliculosis.

Another thing is that because of the absence of the thickened, indurated base in folliculosis you can trace the course of the blood vessels of the lid over the edge of the tarsus and back into the cul-de-sac, but you cannot do that in trachoma.

When you evert the lid and press against the part that is constricting the blood vessels the lid will blanch out in folliculosis, while in trachoma this is not true. Later on there is the presence of scar tissue and hypertrophy of the conjunctiva, but it is important to make the diagnosis earlier than this. If we wait for marked pannus and scar tissue before making the diagnosis we are waiting too long for the best results for the patient. By use of the loupe or the hand-slit lamp beginning pannus may often be discerned long before it is apparent to the naked eye. We should aim to make the diagnosis as early as possible.

We often see a folliculosis with conjunctivitis. I object to the term "follicular conjunctivitis" as applied generally to folliculosis, for the patient does not usually have follicular conjunctivitis as such. He will have the folliculosis and may get some dust in the eye, or catch cold, and then develop a conjunctivitis. At such a stage it is impossible to make a definite diagnosis. The thing to do is to mark such a case suspicious and see the patient again in a few weeks, using mild treatment in the meantime instead of calling it trachoma at once and instituting intensive treatment. The way to make a sure diagnosis in these doubtful cases is to consider them doubtful and see the patients repeatedly, at intervals of two or three weeks, and in that way you can clear up the diagnosis. That I think is a better plan than to consider them trachoma at the start and subject the child to radical treatment when he may not have a trachoma at all.

I have had the experience more than once of having a case of vernal catarrh referred to us for diagnosis by ophthalmologists who knew much more about the eye than I did and who

should know more about vernal catarrh than to confuse a typical case of it with trachoma. The fact that there are flat surfaces, glistening large granules in vernal catarrh, usually each one with its own sulcus around it, and that you can wipe up this thin, ropy discharge, the fact that the cornea is clear even in cases of very long standing, and the fact that the lid is not inflamed in most instances are all diagnostic points. You can take a slide and make a smear, examine it with the proper stain, and see the large numbers of eosinophile cells which are present in cases of vernal catarrh, and this will clinch the diagnosis.

I am emphasizing the diagnosis because this is what you men should be doing. Some of you are specialists, I take it, and some are not. All of you are seeing trachoma or suspected trachoma cases more or less. I believe we can all do much good by allaying the fears of anxious parents or teachers in clearing up the diagnosis in negative cases. This we can all do. Make a careful differential diagnosis between folliculosis and trachoma. We should not call everything with bumps on the lids trachoma because there is trachoma in the neighborhood.

There is one thing about states like your own which have a considerable Indian population. Dr. Taliaferro Clark made a survey in Minnesota in 1913 and covered the same ground ten years later. He found that, whereas on his first survey in certain counties one out of eighteen of the school children were of Indian blood, in the second survey one out of six were of Indian blood, and there was much more trachoma in those schools than in 1913. This seemed to indicate that contact between the Indians and the white population as the Indians leave the reservations and take up their residence in the communities was causing a spread of trachoma.

I brought along a series of lantern slides which show various trachoma lesions and the results obtained from operation in many of them. (Presented a series of slides.)

Through the courtesy of Dr. Drew and Dr. Whittemore we have brought a few patients for presentation. They have not typical trachoma, but they demonstrate a few things, and we shall be glad to show them to you if you are interested.

#### DISCUSSION

DR. JOHN H. RINDLAUB (Fargo, N. D.): I wish to commend Dr. Mossman for his very conservative treatment of this subject. You will remember when a paper on trachoma was presented at the meeting

in Fargo it resulted in a very acrimonious discussion. Dr. Mossman has taken the middle ground. As you know, many of the laity dread trachoma as much as they do syphilis. Being in close proximity to an Indian Reservation we have had a great many Indians from there and rarely have a case of trachoma in the office from that locality in which we cannot trace Indian blood. Among the whites there are certain areas where trachoma is more prevalent in our state. If I see a patient from Strasburg, for instance, I say it is probably trachoma. There seems to be a focus of this disease down there. Why it does not always pass from one family to another, or from one member of the family to another, I do not know. There seems to be a strange immunity in some cases. I remember when traveling in the Orient we saw great numbers of cases. In India and China there are many cases and they have other organisms superimposed upon trachoma. There is the Morax-Axenfeld bacillus, and a great many of the patients are infected with gonorrhea. In Egypt the doctors there told me that trachoma and gonorrhea frequently existed in the same eyes, and it was not due to sexual intercourse, but more often to contact with soiled hands. There is no doubt about the disease being contagious, and you remember during the World War we had reports of the soldiers from the East being lined up in the morning and the doctors would come along and put in drops so that they would not contaminate the rest of the soldiers.

This talk to-day is along the line that Dr. Whittemore would like to have, I am sure. In North Dakota we have the smallest percentage of blindness according to population of any state in the Union, and we are proud of that and do not wish to get the reputation some of the other states have.

There is another thing I would like to mention, and that is that the late Dr. J. A. Stuckey, of Lexington, Kentucky, is the man who really started this campaign. He noticed that individuals were coming in from the Cumberland Mountains, the descendants of Daniel Boone, and they all seemed to come from practically the same locality. He presented a paper before the American Medical Association in 1913, and it created so much interest that a resolution was presented, and it was from that resolution that Dr. McMullen of the U. S. Bureau of Public Health made the survey in Kentucky. I think he found that one out of eight in that state had trachoma. Good work always requires a pioneer, and Dr. Stuckey was that kind of a pioneer. He went up in the mountains at his own expense, took along some nurses, and treated the "poor white trash," as they were called, although they really are from some of the finest American stock of the Revolutionary type even of to-day. The results he obtained stimulated the United States to establish hospitals throughout the regions where they have the most trachoma and where they treat it with success.

I cannot sit down without saying something about the trachoma hospital we previously had in this state. It was established at LaMoure, and I wish to condemn the work that was done there. They would take any case of folliculitis and operate on it. Dr. Mossman has shown very clearly by his lantern slides, many of which were published by

Foster in one of the best articles I have ever seen on trachoma, that the disease can be diagnosed in almost every instance if one looks into the cul-de-sac with a magnifying glass, noticing the condition of the blood vessels, particularly whether they are obliterated or not.

DR. GUSTAVUS J. McINTOSH (Devils Lake, N. D.): Is it not a fact that when one gets a real case of trachoma in an advanced stage there is ptosis of the upper lid, and is it not a fact that in most cases there is lacrimation and pus formation and other symptoms? I am a general practitioner and for several years I have been going over and treating the Indian children at Fort Totten, and I have observed them for many years. I find that if we give the treatment prescribed by the United States Government a lot of them will respond, and a lot will not.

As far as contagion is concerned I do not believe there is much to it. I have been visiting there since 1912, off and on, principally on, and I find that in most instances one can go into a house where they have good food and not find the disease. I would like to have Dr. Mossman explain the theory that I have that the disease needs good food and good hygienic conditions, sun and light and fresh air. I have seen a lot of these cases right in Devils Lake and have referred many of these patients to Dr. Drew when I see they are worse. It is interesting to examine these children from year to year. I examine the children about the first of September when they come in to school and dismiss them about the first of June, and I find if they have a wholesome, nutritive diet and the silver nitrate treatment we get very good results. Some will not react, but the great majority do.

DR. G. F. DREW (Devils Lake, N. D.): Devils Lake city is situated near the Fort Totten Reservation where there are about 1,200 Indians, about one-fourth of whom have had a positive diagnosis of trachoma by Government trachoma experts.

Last fall we asked Dr. Yates, who was at Fort Totten operating on 100 or more cases he thought suitable, to assist us in examining the school children of the city for trachoma. He and three of our doctors examined all of the cases which had been selected by the public health nurse as suspects, —about 300 in all, including the State School for the Deaf. A positive diagnosis was agreed on in 96 cases. This report precipitated a very acute discussion about what to do with these cases. Some parents took their children to various specialists in larger cities. Most, if not all, of these cases came home with a negative diagnosis and it seems that a negative is easy to get from some doctors, even in the quite pronounced cases. On the other hand people whose children did not get a diagnosis of trachoma did not want to send their children to school with those who were supposed to have it, and the question of how to settle the matter became very acute. The School Board and the Board of Health offered to allow children to attend school who would take treatment, which was being furnished free. About thirty consented to have a grattage operation done according to directions by Dr. Yates of the Indian Service. I kept track of most of these cases, and they seemed to have



good results generally, and no serious results followed. It seems to me the operation carefully done in proper cases is good treatment, but I do not consider it a cure, for I do not think there is one yet.

About thirty of the milder cases took treatment and were improved; and the rest of them obtained health certificates and were allowed to return to school with the rest in accordance with a state law which seems to allow any child to attend school if it can get a health certificate from any doctor. This seems to give the practitioner more authority than the health officer. I think this will end any attempt to control trachoma in our city. Unless a definite diagnosis can be established or a cure effected it is evidently useless to try to enforce any rigid rules or regulations.

I am of the opinion that trachoma among well-fed Americans is a much less serious problem than among Indians, and even where infection has taken place it only occasionally is progressive. This makes it still more difficult to diagnose, even time does not always aid. From a health officer's standpoint I think it is useless to try to enforce any rigid rules or to keep children from school. They are not much more likely to spread the disease in day school than anywhere else. If we must wait until all or nearly all practitioners agree on a diagnosis the disease will usually be of several years standing.

The beginning or mild cases that have not been suspected are just as apt to spread the disease to others as the pronounced cases, that those coming in contact can see and avoid.

My object in speaking is to warn health officers of what will probably happen if any attempt is made by them to diagnose and control trachoma.

DR. MOSSMAN (closing): I do not believe I can answer all the points that have been brought up, for the hour is late. One point I wish to make is that you should look for pannus early in trachoma. We have been taught that it is an accompaniment of the late stage of the disease, but if you use a hand-slit lamp you will find it very helpful in these cases. You should look for pannus with a magnifying glass and illumination early.

In our trachoma hospitals the patients are examined and treated daily. In each case the eyes are irrigated by the nurse five times a day. The patients are kept under close hygienic supervision, with good food and plenty of soap and water, all of which we think contributes to the success of the treatment in hospitals, which is much better than trying to do it outside of hospitals. We realize the great disadvantage the practitioner has in attempting treatment outside the hospital.

In regard to ptosis and that sort of thing: Of course there is a thickening of the eyelid and then a turning in of the eyelid with trichiasis. I did not attempt to touch on all of these. There is no pus discharge, as a rule, unless there is a secondary infection.

The same thing can be said about trachoma that is said about tuberculosis: those who are well housed and well fed, and have good hygienic surroundings do not as a rule develop tuberculosis.

## WHAT IS WRONG WITH THE GENERAL PRACTITIONER?

BY AN OLD COUNTRY DOCTOR

Fears have lately been expressed that the general practitioner of medicine may be unable to hold his ground against the changes, economic and social, which are now in progress. He appears to have lost his background, and it is certain that he has lost his importance in the community, at least in the smaller places, formerly known as the rural districts.

The term "rural districts" is no longer appropriate to many localities which are now connected by good roads and rapid transit to the larger towns and cities.

The old-fashioned country doctor has had his day, such as it was, and has passed from the scene forever—he was adjusted to his environment, but his successor has been unable, so far, to adapt himself to the new conditions which prevail.

It has become quite the fashion of late, when saying the last word to graduating classes of medical students, to hold up before them and unfold for their emulation, the character of Doctor Weelum MacLure as set forth in "The Bonnie Briar Bush" by Ian MacLaren.

The ready tear starts to flow from the layman's eye as Doctor MacLure passes before him, but the experienced practitioner of medicine sees in a different light and places a different interpretation on many of the adventures of this good doctor. He sees in Doctor MacLure a fairly competent practitioner of the old school who lived in a community of pastoral simplicity, in which no other individual overshadowed the doctor in importance. He was of an emotional disposition and was enamoured of his work, which he took rather too seriously. The people patronized him and were attached to him, presumably on account of his devotion to duty and self-sacrifice, but probably because he was the only physician available, self-sacrifice on the part of a doctor being a thing soon forgotten.

But far be it from us to make light of a picture painted by a master hand. When MacLaren presented Doctor MacLure he paid a glowing tribute to the medical profession. This doctor did not have to eat of the bitter fruit of competition. He was not harassed and annoyed by the

many restrictions and cares which surround his brethren of to-day, such as the high cost of living and venomous competition. MacLaren estimates his income at about eight hundred dollars in real money per annum with various emoluments, such as free house rent and other perquisites which would render his overhead practically nil. Considering the value of money of that time compared with its value to-day and comparing the cost of living at that time with the cost of living of the present time, it is a conservative statement to say that his income was equivalent to that of a practitioner of to-day who takes in two thousand dollars in cash per year, book accounts and other shadows not being considered.

So we see that in spite of the phenomenal advance in medical science, the economic status of the general practitioner has not improved from that day to this.

MacLaren embodies in Doctor MacLure those qualities of mind and heart which ought to animate the true physician.

But these graces require a suitable environment in which to flourish. If a gentleman without guile, like Doctor MacLure, should engage in the practice of medicine here to-day under the sordid conditions which prevail, with nothing to go on but those noble qualities with which MacLaren endowed him, he would cut but a sorry figure in the struggle for existence.

The student at college is led to believe that if he perseveres in his studies and possesses some of the qualities of Doctor MacLure, his success will be practically assured. When he gets out into actual practice and sees the automobiles parked two rows deep around the door of some ignorant Chiropractor or some equally ignorant but regularly licensed M.D. with his reception room crowded with patients and an overflow meeting going on out in the hall, he begins to wonder if everything he was told in college was true, but the young doctor has got to learn what the old practitioner knows.

The cry of a dearth of doctors in the rural districts has of late become so insistent and the wail has become so plaintive that some of the higher ups in the medical profession have become excited and are writing essays on the subject. This calamity is not so serious if we view it in its proper light. Fifteen or twenty years ago every village, hamlet, or crossroad, boasted its local M.D. If one of these left or passed away the vacancy was immediately filled, sometimes two coming to take the place of one. Now all this is changed; when a local practitioner

leaves his post, the vacancy remains unfilled, so that considerable areas now exist, including many small towns and places, where no medical man is to be found. The existence of these areas, gives rise to the cry of "scarcity of doctors" in the rural districts. It also furnishes an argument for those who wish to refute the fact that the profession is overcrowded.

Experienced practitioners tell us that if each and every one of these places were immediately supplied by a qualified M.D. he would have to leave for the same reason that his predecessor did—the people would not patronize him. The automobile which has greatly extended the range of the local doctor's possible activities has at the same time greatly enlarged the layman's field of choice, when in search of medical service.

Italy always lies over the Alps in the lay mind, and they have a belief that good doctors are not to be found in small places. The practitioners who formerly occupied these small places have either died or have moved to the medium-sized towns or cities, where their last condition is often worse than their first. A survey of these medium-sized towns shows that a few men are doing the bulk of the work, while the others are hanging on to the rough edge, trying to get enough practice to keep the wolf from the door, not a very good soil we would say for the flowers of ethics and honor to grow in. We need not concern ourselves too much for the plight of these places where no doctors abide, for between the telephone, the good roads, and the automobile while medical aid may be more distant in miles, it is nearer in time than it was formerly. It was not perverseness that made the doctor leave the small town, it was grim necessity, the migration has been going on for a long time and the exodus is still in progress.

Unless one takes a rosy view of the future and everything else, and talks in a namby pamby and simpering manner of serious and important things, he is a pessimist and is treated with scorn. But if he believes that the human intellect is advancing with giant strides (Science to the contrary) and that the millennium is near at hand then he is an optimist, and everything he says is eagerly gulped down. If we complain that the profession is overcrowded, murmurs of disapproval arise and we are told that "there is plenty of room at the top." But as such a silly saying is not a sufficient answer to so serious a complaint it should not deter us from at least considering the case.

Gravitation aided by some of the other form-



idable forces of nature determines the size of living things. There are other laws equally formidable, of an economic nature, which determine the size of human institutions.

If a giraffe had the body of an elephant, it would break its legs if it tried to walk. If the medical profession should grow too large for the population and if, at the same time, its economic supports are too slender, it will fall over and refuse to function properly. There should be, and there is, a certain optimum point, a point where a certain relative number of medical men to a certain relative number of the people (one doctor to so many people) should result in the greatest benefit to both, where the doctor could live on a plane suitable to his profession and where the patient should receive the best service the profession is capable of giving. Of course this point has never been sought. The literature on the economics of medical practice is disappointingly small, it consists merely of a few platitudes and a few aphorisms mingled with some little sayings of some big men. We cannot expect much light to be thrown on this subject by the leading members of our profession. They would have to live the life of a common practitioner to get a true perspective. This subject at least is one on which the general practitioner can speak with authority.

Unfortunately, however, the general practitioner does not speak at all; his pride keeps him silent. If he would write down his troubles for publication he would be sure of a sympathetic hearing. Because there is a strong spirit of fraternity in the medical profession which has no equal in any other profession, economic necessity reigns over us all but we are bound together by the tie of a common devotion.

When we look around us and see so many general practitioners of medicine leading a hand-to-mouth existence, not over one in ten of them living in modern homes, and living on a plane inferior to the average business man, we naturally ask ourselves, what is wrong? Of course, if everything is all right, and if nothing was ever wrong, then our idle curiosity is satisfied.

The light of many sciences had to be focused before medical science was revealed. As yet we can see but darkly, but we hope to see with a clearer vision before this wave of progress begins to recede, or before the time comes when science and learning will again be engulfed by ignorance and superstition.

Medical science is a thing apart from the medical profession. Medical science is the means whereby the medical profession gains its

livelihood. Medical science is not influenced by outside conditions. The medical profession is sensitive to changes of a social or economic nature. This is more especially true of that part of the profession known as the general practitioners. The general practitioner represents the lower stratum of a stratified profession. If he were removed the rest of the profession would remain suspended in the air or fall to the ground. His importance can hardly be overestimated. He is the most versatile of the specialists. Scientific research and investigation are carried on to make him efficient.

The general practitioner of medicine can practice his art in any environment. Wherever human beings are found his services are in demand. Like Gunga Dhin who "went to tend the wounded under fire," he can get along with a minimum of equipment if necessary.

In strong contrast to this perfection of adaptation where simply the technic of his art is concerned is the difficulty that he finds in adjusting himself to changing social and economic conditions, so that he may continue to practice and supply his material wants. He deals directly with that heterogeneous mass known as the public and thereby becomes sophisticated and polished. He stands as a buffer between this public and the rest of his profession who lead a more secluded existence.

He receives the poorest compensation and his lack of business ability is proverbial. Everybody undertakes to give him advice and the magazines give space to articles by alleged business men, telling him what to do with his money. The gist of these articles is to let some one else handle his money, he himself being incompetent. "Find some honest young man in the local bank" they say to the small town doctor "and let him collect your money and do your business for you." If they would carry this advice through they would tell us what to do when we discovered that the honest young man in the bank was not as honest as we thought he was.

Men of wit and wisdom do not give advice, but, if such an one should make an exception in favor of the young doctor, he would say, "Attend to your business yourself. Trust nobody with your money, you have no right to put temptation in the way of any *honest* man, be he young or old."

In losing money the danger is not always where it appears to be. You may escape the tiger and the shark only to sink in the soft morass of friendship. People will not steal your money if you do not give them the chance. But experi-

ence alone teaches, and advice is never heeded. A doctor makes his money hard. Young doctors often squander their money at the start, thinking that they can make lots more in the future, but that is their own lookout.

These gentlemen who undertake to teach subtlety to the simple overlook the fact that the practice of medicine is not a lucrative business for one reason and that there are too many in it for another. It is not fair to a young man to encourage him to spend the best years of his life preparing himself for a profession where the rewards are uncertain, where there is no advancement, and where merit counts for as little or less than in any calling that we know of. A young man cast adrift with a medical diploma in his hand, without influence or money behind him, is as helpless a person as we can well imagine, so very much is expected of him. He can no longer go to the rural districts to practice where in former times he would at least have been able to live. He would be immeasurably better equipped for the battle of life if he had a card in the bricklayers' union.

A young man from a Class A college ought to be a highly qualified medical man—and he is. He ought also to be something of a gentleman, and he is. It is not difficult to understand why he might find many communities uncongenial through no fault of his own. We cannot impress people with our learning. There is too much mystery wrapped around the practice of medicine for the lay mind to penetrate.

The property minded layman judges a doctor's ability by his material success. The incantations of the cults are more impressive to the lay mind than any scientific argument that we can produce.

Our efforts to educate the people are of no avail. Their minds are occupied by their own efforts to obtain a livelihood—we expect them to understand things that we only partially understand ourselves. The highly qualified young doctor feels helpless when he finds out the kind of competition he is expected to meet.

As a profession we seem to have lost the instinct of self-preservation. We do not understand ourselves and do not try to. We could rid our minds of much cant if we would examine ourselves for sham and imitation. We are so solicitous about the public weal, that we lose sight of our own interests. The public, on the other hand, are charmingly indifferent to our welfare; they give aid and comfort to our enemies whenever they get a chance.

It is easy to talk of backgrounds and other figures of speech; it is even easy to suggest

remedies, but it is quite a different thing to put these things in operation so that results will be secured.

But the fact remains that the medical profession cannot stand overcrowding. It destroys its morale; it makes a trade out of a profession, and gives salesmanship a place in the front row of our various virtues; competition is stimulating up to a certain point, but beyond that it becomes degrading.

Some effective means of restricting the number of medical students until we see where these evolutionary changes are going to lead us would contribute to the happiness of those who are starting on their career. Whatever happens, the honorable and scientific profession of medicine will not lose its prestige nor its authority; nor does the general practitioner need to despair for every cloud has a silver lining. When these changes have passed and the sun shines again, we expect him to come back more glorified than ever.

## BOOK NOTICES

**Text-Book of Bacteriology.** By William W. Ford, M.D., Professor of Bacteriology, School of Hygiene, and Public Health. Lecturer on Hygiene, School of Medicine, Johns Hopkins University; Member State Department of Health of Maryland. Octavo of 1,069 pages. Illustrated. Philadelphia and London: W. B. Saunders Company, 1927.

The work takes up the study of all microorganisms causing diseases and those that affect the health in any way. The book has been written for the student of medicine, the physician, the hygienist, and the public health worker.

It is divided into six parts.

Part I deals with bacteriological technic, cultural methods, staining characteristics, and is of particular interest to the student and bacteriologist.

Part II takes up systematic bacteriology, the description and characteristics of disease-producing bacteria.

Part III deals with the distribution of bacteria.

Part IV treats of infection and immunity and the effects of bacteria and their toxins.

Part V gives a full discussion of the spirochaetes. This is a very important section and not to be found in the ordinary text-book of bacteriology.

Part VI takes up the filterable viruses and agents of undetermined character.

The work has been written from the author's own observations on clinical cases, autopsies, and other sources where disease organisms have an influence on health. The author has made use of current text-books and the bacteriological literature, but this book cannot be considered a compilation of bacteriological literature.

The text is abundantly illustrated with free hand camera lucida drawings, giving exact representations of the organisms.

The book can be highly recommended as a text and reference book.

—F. GRAVE, M.D.



# THE JOURNAL-LANCET

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## CONTRACT PRACTICE

There is much to be said on Contract Practice, but one must be careful and considerate in discussing it because the average doctor believes that if a physician works for a corporation or a company, or even for a lodge, he is nothing but a "contract doctor," when, as a matter of fact, there are many forms of what is known as *contract practice*. The most common form is that of the life-insurance examiner who enters into a more or less obligatory contract to examine a patient for life insurance, but he seems to have a good deal more freedom in his opinions and in his declaration of the state of the patient than do many of the contract surgeons, that is, he can reject the patient for life insurance without any question. Or, if he states the actual fact in the case the company doctor gets a full report, has his own method of eliciting an examination, and ultimately decides whether the policy shall be issued or not. So that this is a safe and simple form of contract practice. The writer does not mean to infer that other forms are not safe, too, but an industrial house, a factory, a large concern of any kind employing a large number of men, find it necessary to employ a physician or surgeon to keep their men in good trim. The result is that they have fairly frequent examinations, they are examined for their fitness and

qualifications before they are employed, all of which is based upon the report of the physician or surgeon in charge. Some of these concerns are large enough, industrially, to employ a whole-time man who has assistants and nurses, a laboratory and a surgeon at his disposal. This is probably the highest grade of contract practice, and should be looked upon, from the physician's point of view, as a perfectly legitimate plan.

If anything should come up in which there was a disagreement between doctors, the State Industrial Commission has the last call in the settlement of the matter. Sometimes even here there is a sharp disagreement between men, either of the industrial house or the State Commission, or from other angles, so the man is not unprotected. He may, if he chooses, depart from the decision of the Commission and bring the matter into court or at least bring the matter before a referee who hears the testimony on both sides and decides whether the Commission is right or wrong.

There are a number of men in the country and in the cities who are obliged to respond to calls which in themselves are contract calls. They may make an agreement with the patient to take care of him under certain conditions, and they may continue to do so unless there is some interference on the part of friends of the patient, or the enemies of the patient. At any rate they are at liberty to go into court or before the State Commission in some way. A good example of how contract work is done is that of the telegraph and telephone company. They employ a surgeon to take charge, as an adviser, of their medical problems. He is called upon to select from physicians throughout the state, or at least in his territory, those who are proper men to take care of the sick or injured. For this he gets a certain sum of money, and naturally he will be called upon to take care of any of the employees of the company, but for which he charges his own fee or at least a fee agreed upon between him and the corporation.

Then, too, there is a notable tendency toward the employment of a physician in lodges of various sorts, and here perhaps more criticism is displayed than in any other form of contract practice, for the fees are much under the normal fee for other services outside of contract work, and this sometimes brings about a good deal of criticism from neighborhood doctors, who feel that they are losing out in their business through the undermining of their fees.

Recently some distinguished men in the East have been drawn into controversy. Not only in

the East, but in the West, as well, men have been criticized by their local societies because they expressed conservative views. It has been said, too, that these men are thinking toward State medicine, and the editor supposes we all feel that most of the changes that have come in the past two decades are in violation of some of our old principles. So they are, but this is inevitable. We must expect what some people prefer to call it progress, but which we prefer to call the adaptation of our methods to the present times. So far as we can learn there has been no definite decision by the Committee on Contract Practice to hand down a final decision for the Minnesota State Medical Association, but the time is coming when there will have to be adjustments that are pretty well defined, and we must all be prepared to accept what it is impossible to prevent,—changes that are to be tried out, changes that are constructive or destructive, and when these occur we shall know where we are.

#### WHAT THE NECROPSY SHOWS

The editor hesitates a little about writing this article because it is based on the gruesome report in the *Journal of the A. M. A.*, November 24, 1927, entitled "Necropsy Report on Persons Dying Shortly After the Extraction of Teeth," by Richard C. Buckley, of New Haven, Conn. Fortunately, these occurrences are extremely rare, or we may say comparatively rare, because one hears very little of death following teeth extraction, but one hears a great deal of clinical-pathologic reports in people who have their teeth removed at an inopportune time. Sometimes it is the wrong time for the dentist to remove teeth, and not infrequently it is the fault of the doctor who advises the removal. Occasionally it is the fault of the patient, who does not know whether he should have his teeth removed or not.

That the question of diseased teeth is an important one no one denies, but the dentist is the man who takes a good deal of responsibility upon himself, and he knows it; consequently, he is more inclined to be conservative than reckless.

The first report of Dr. Buckley is on a man, a farmer, of 44, who had diabetes over a period of three years. This man had failed to follow dietary regulations during this period and had lost twenty-five pounds and become very weak. He had had trouble with all of his teeth and in April, 1920, had two molars removed under gas anesthesia. Four days later the remaining teeth

were extracted under the same method. Following this there was considerable hemorrhage, and during the next five days the patient became seriously ill and finally comatose. Before the patient died there was a strong odor of acetone from the breath. The gums were lacerated, sutured in places, and covered with a gray-green necrotic slough, from which much pus exuded. The heart was distant in sounds, feeble in action, and very rapid. No urine was passed for several days before admission to the hospital. The laboratory examination showed blood sugar to be 840 mg. per hundred cubic centimeters of blood, the non-protein nitrogen of the blood 94 mg., and the urea nitrogen 65.3 mg. The blood serum was thick and yellow. The man died within twelve hours of admission to the hospital. The autopsy was made six hours after death. The principal observations were a hypoplasia and hyalinization of the insular tissue of the pancreas, a diffuse acute inflammatory reaction involving the pancreas and stomach, recent necrosis of the myocardium, liver, and renal epithelium. These necroses were manifested by vacuolization of the cells. This case was regarded as one of aggravation of a diabetic condition by the extraction of many teeth followed by infection and lacerated gums. This shows a very serious complication of diseases. Yet what was the man to do? What was the doctor to do? Who could tell the dentist what to do? It was quite evident from the necropsy findings that the man had but a short time to live had no teeth been extracted.

The second case was that of a white man, an executive, aged 56. He had his upper teeth removed about two months before he was admitted to the hospital because of pyorrhea alveolaris. During the next five weeks he complained of severe pain in the body, but particularly in the left side and in the middle of the back. Three weeks before he was admitted to the hospital the patient had the last of his teeth removed. Then, later, several things happened, particularly vomiting, dizziness, dyspnea, and palpitation. This man had a poor recollection of words in speech. It was found, too, that his pyorrhea alveolaris was present about the lower teeth. His blood pressure was 158/82; pulse, 96 per minute and regular. The heart was not enlarged, but it had a rough systolic murmur. The urine contained 35 per cent albumin, no sugar, numerous hyaline casts, a few granular, epithelial, and fatty casts. All these conditions improved for a time, so that his advisers were more or less misled by the subsidence of his symptoms. After



he was admitted into the hospital he went through the usual examination with about the usual findings except that he had an edema of his disks and a sclerosis of his retinal vessel. This man had chronic nephritis with uremia. He was put on a limited protein diet, but his nausea and vomiting recurred. He was discharged in twenty-three days unimproved, and upon reaching home he became semistuporous, and breathing became rapid. He was re-admitted to the hospital, and death occurred shortly afterward through heart block. The necropsy findings were: heart was hypertrophied uniformly, but the coronary vessels, pericardium, endocardium, and valves did not present gross changes. The myocardium was brown-red with countless small light brown areas, which was the principal pathologic condition, but his kidneys exhibited sufficient evidence to show that he had a glomerular nephritis. This and other conditions in the kidney were sufficient to account for chronic nephritis. He also was found to have a small carcinoma of the prostate with extension into the seminal vesicles, and cystitis and pyelitis.

The third case is that of a white man, laborer, aged 43. He had a toothache and swelling on the right side of the face three weeks before admission to the hospital. A week later the first and second upper right molars were removed, but the dental surgeon noted a chronic alveolar abscess of the last tooth, but the area was curetted. In the next two weeks the local condition became worse, swelling increased and more painful. He then had a temperature of 103° and fairly normal pulse and normal blood pressure. The teeth and mouth attracted attention at once, that is, the teeth were carious, and pyorrhea was present. But the area in which the teeth were removed was found necrotic and red and swollen, and coated with a green-yellow slough. The patient was treated for two weeks, and the infected areas were opened and irrigated and then packed with gauze.

The patient's condition grew worse, and two days before death the signs of meningitis and possible cavernous sinus thrombosis developed. Death occurred six weeks from the onset of the toothache and five weeks after the extraction of the teeth. This man died of cellulitis of the face and an acute meningeal infection.

It seems rather strange that these cases were all so ill at the time the teeth were extracted, but the writer assumes that these three patients were treated in the very best possible manner

with the expectation that something might be done for them.

## OUR MEDICAL SOCIETY AND ITS FUTURE

The editor of *THE JOURNAL-LANCET* from time to time has urged the members of the various medical societies to get into action and do something for the good of their societies. Some time ago the churches began a widespread campaign about going to church; it was advertised, of course, in the daily papers. The result was that on the following Sunday all the churches were crowded. Perhaps that meant a revival of conscience; perhaps it meant curiosity. We do not know what it meant, but it accomplished a definite result, and it extended over until Thanksgiving Day, when the churches were again crowded to capacity. Why cannot we doctors do something like this for our medical societies? The writer ventures to assert that many of the county societies are not very well attended, at least they are not very well represented outside of their own community. In about equal proportion, too, our district societies, our consolidated societies, are not doing as well as they ought to. There may be some reason for this. Many of the physicians have not been very busy of late, and they simply shrink from any absence from their own fireside and their own practice. But as the cold weather advances there is a notable increase in the attendance upon medical societies.

Our own county society is lacking in enthusiasm, although the meetings are unquestionably much better than usual, but the attendance is not. In the Hennepin County Medical Society where we have four and five meetings a month, that is, a noonday meeting, between twelve and two o'clock, which includes a luncheon, on every Wednesday, and one monthly meeting on the first Monday of every month, there is a contrast between the day meeting and the night meeting. Unless it is something particularly spectacular, the members do not attend the night meetings as they should. Attention is called to the fact that on the fifth of December there will be a meeting which is held in the evening, that is, dinner is served between six and seven o'clock for fifty cents and the men straggle in after six and six-thirty; it is quite noticeable that some of them are still feeding at seven o'clock! At seven o'clock promptly the program begins. The usual business meeting lasts perhaps for half an hour, in which from five

to ten committees may report, the report of the Secretary on the previous meetings, the report of the Executive Committee with recommendations, and the report of special committees which have to do with the functions or future of the Society. It happens that on December fifth there is the election of officers for the ensuing year. A new president will be nominated and elected by ballot during the month up to January. All these things are not only interesting but demand the attention of the largest number; for it has been freely said in criticism of the Hennepin County Medical Society that it is run by a few, dominated by a few, and the younger men are apt to think it is dominated by one or two men, in all of which they are wrong; it is their privilege, as well as the privilege of others, to be present, to vote, and to express their opinions, as they usually do. Some may do it because they feel they should have a more definite say in the matter of the medical society and its labors; others are doing it because they like to enter into discussion and perhaps to suggest a better way of performing the duties of the Society, while a very scattered few are dogmatic or antagonistic.

If we did but know it, a meeting of physicians in a medical society is as much for social progress as for intellectual and medical progress, and there is no reason why men should not gather together and discuss problems concerning the activity of the society or its members and to freely comment on and discuss the papers which are presented. The writer wonders how many of the men actually know what the duties of the president consist of. During his year of presidential office he is obliged to attend not less than three or five meetings a week and it is no easy matter for a man to give up a great deal of his time to become a president of the Hennepin County Medical Society unless he is ably supported by his confrères. And it should be our pleasure, as well as our duty, to see that we have good officers, good working committees, and a large attendance. The editor suggests that some one or two be detailed to call up the members of the Society and remind them that it is Hennepin County meeting night; for really, in spite of all the criticism that may be offered, Hennepin County has a wonderfully good medical organization, a large and interesting library, and a goodly number of hardworking men who are looking after the interests of the medical men in general and the Hennepin County Medical Society in particular, in which there is no ax-grinding.

## MISCELLANY

### HISTORY OF THE CHRISTMAS SEAL

The double-barred cross Christmas Seal this year has a new significance. It has become a living memorial to Einar Hoelbell, originator of the seal sale idea, who died during the past year at his home in Denmark, at the age of 62 years.

Nearly every one is familiar with the story of the Danish postal clerk who, in his efforts to raise funds to build a hospital for crippled children, originated an idea which has made possible the greatest health campaign of all times.

It was on Christmas Eve, in 1903, that Mr. Hoelbell, at that time an obscure post-office assistant in a little town in Denmark, noted the gayly colored seals on the holiday mail, and mused on the fact that their service was only one of decoration. Then a wonderful idea came to him. Why not have every seal represent the contribution of one cent to bring health to boys and girls who were crippled and ill?

The following year his idea, sanctioned by the Queen of Denmark, was put into use, and as the postal clerk handled the holiday mail he had the satisfaction of seeing seal after seal that meant pennies and more pennies to help cure the crippled tots of his country.

So successful was this first Christmas Seal sale that the idea quickly spread and soon a number of other countries, our own among them, adopted the plan. The first national sale in the United States was in 1908.

By the double-barred cross the true tuberculosis Christmas Seal can be recognized. The story of the origin of this cross is an interesting one. It was the emblem of the Greek or Orthodox Catholic church during the ninth century, and became familiar to the Crusaders of the Middle Ages during their campaigns to conquer Jerusalem. Godfrey, Duke of Lorraine, a leader in one of the first Crusades, took this cross as his standard when he became Christian ruler of Jerusalem in 1099. Upon returning to France he made it the insignia of his own house, thus the Lorraine cross evolved from the eastern church emblem. In 1902 this Lorraine double-barred cross was adopted as the official emblem of antituberculosis work throughout the world at the International Conference on Tuberculosis.

People of to-day enrolled under the double-barred cross are true Crusaders fighting against an enemy which threatens their own homes, towns, state and nation. Every penny seal sold brings nearer the day when tuberculosis will no longer be a menace.

## NEWS ITEMS

Dr. A. J. Arneson has moved from Austin to Starbuck.

Dr. A. B. Hawes has moved from Butler, S. D., to Gayville, S. D.



Dr. J. S. Whitson has moved from Hannaford, N. D., to Gackle, N. D.

Dr. E. A. Heiberg, of Fergus Falls, was married last month to Miss Josephine Anderson, of Northfield.

Dr. J. C. Greenfield, of Avon, S. D., was elected president of the Chamber of Commerce of Avon, last month.

Work on the \$70,000 addition to the Mineral Springs Sanatorium, at Cannon Falls, has been delayed and will not be taken up until spring.

Over 2,000 mothers in 70 counties of Minnesota have been taking a correspondence course at the University of Minnesota, on child training.

The Women's Auxiliary of the Hennepin County Medical Society has voted \$100.00 to purchase books for the library of the Glen Lake Sanitarium.

Mr. Samuel W. Fairchild, of the firm of Fairchild Bros. and Foster, a name well known in medical circles for the past fifty years, died on November 13.

Dr. Clarence F. Sweney, of St. Paul, died last month at the age of 70. Dr. Sweney was a graduate of Rush, class of '81, and had practiced in St. Paul since 1886.

Miss Mabel Johnson, of Mankato, who has done notable work as public health and school nurse, has been appointed field worker in the tuberculosis work of the Minnesota Public Health Association.

Dr. Anton Shimonek, of St. Paul, died on November 23 at the age of 72. Dr. Shimonek graduated from Rush, class of '79, and after doing postgraduate work in Vienna began practice in St. Paul, later specializing in surgery.

Dr. C. E. Sherwood, of Huron, S. D., has been appointed assistant collaborating epidemiologist in the U. S. Public Health Service for duty in the state of South Dakota, and also superintendent of the Lake County Board of Health.

The Hennepin County Tuberculosis Society invited the editors of all the papers in the County to "tea" Sunday afternoon, November 20, in the Citizens' Aid Building, to hear all about Christmas Seal sales and to see the fine new building.

The Interurban Academy of Medicine of Duluth and Superior, elected officers as follows at its annual meeting last month: President, Dr. W. H. Schnell, Superior; vice-president, Dr. W.

G. Strobel, Duluth; secretary-treasurer, Dr. H. A. Sinock, Superior.

The Camp Release District Medical Society held its annual meeting at Olivia last month. Officers for 1928 were elected at follows: President, Dr. A. A. Passer, Olivia; vice-president, Dr. M. A. Burns, Milan; secretary-treasurer, Dr. J. L. Holmberg, Canby.

The Traill-Steele District Medical Society of North Dakota met in Mayville on October 20, and elected the following officers for 1928: President, Dr. M. H. Litman, Hope; vice-president, Dr. B. Odegaard, Northwood; secretary-treasurer, Dr. Siver Vinje, Hillsboro.

Dr. A. C. Strachauer, professor of surgery and director of the Cancer Institute, University of Minnesota, gave a talk on "Cancer," illustrated by lantern slides, before the scientific section of the Northern District of the American College of Surgeons at Duluth, November 17 and 18.

The Steele County Medical Society met at Owatonna last month, when the following were elected officers for 1928: President, Dr. E. O. Ertel; vice-president, Dr. E. W. Senn; secretary, Dr. J. A. McIntyre; treasurer, Dr. F. W. Smersh; delegate, Dr. T. C. Quigley, all of Owatonna.

The Sioux Valley Medical Society will hold its mid-winter meeting at Sioux City, Iowa, on January 24 and 25. The program will be arranged by Dr. William Jepson and Dr. J. H. Henkin, the Secretary of the Association, both of Sioux City, Iowa. The program will consist of papers and dry clinics.

The Washington County Medical Society held its annual meeting last month, at Stillwater, when the following officers were elected: President, Dr. R. J. Josewski; vice-president, Dr. C. H. Sherman; secretary-treasurer, Dr. L. O. Culver; delegate, Dr. C. H. Sherman (of Bayport), all of Stillwater except Dr. Sherman.

Dr. George F. LaPaul, of Excelsior, died on November 17, at the age of 66. Dr. LaPaul graduated from the Minnesota Hospital College, class of '85, and began practice at Waseca and moved to Minneapolis in 1893, specializing in electrical treatments. He remained in Minneapolis until he retired, and he then made his home in Excelsior.

King Gustav of Sweden has appointed Dr. W. J. Mayo, of the Mayo Clinic, Rochester, Minn., a commander of the Royal Order of the North Star, a distinguished honor conferred

upon only a few Americans. This honor was extended to Dr. Mayo for his distinguished services in medicine as exemplified in the Mayo Clinic.

On November 28 Dr. J. A. Myers, of Minneapolis, presented an address on tuberculosis before the Jefferson County Medical Society of Kentucky, and he spoke before other Louisville societies engaged in tuberculous work. Dr. Myers is soon to visit the tuberculosis sanatoriums of the West and South, in Colorado, California, Arizona, and New Mexico.

The Mower County Medical Society held its annual meeting last month at Austin. The Society voted to endorse and assist the Red Cross in its advocacy of toxin-antitoxin for the treatment and prevention of diphtheria. The following officers were elected for 1928: President, Dr. G. R. Metzger, Lyle; vice-president, Dr. C. L. Sheedy, Austin; secretary, Dr. Herbert Fisch, Austin; treasurer, Dr. A. E. Henslin, LeRoy.

The divisional meeting of the American College of Surgeons held in Duluth on November 17 and 18 was a well-attended and interesting meeting. Dr. Theodore Bratrud, of Warren, presided, and papers were presented by New York, Chicago, and Canadian men. Dr. Eric Quain, of Bismarck, N. D., presented a paper on "Acute Appendicitis, with a Report of 1,000 Corrective Cases." Papers by Rochester, Minneapolis, and St. Paul men were also given, and a visit to the Duluth Hospitals and a banquet at which Dr. Arthur C. Collins, of Duluth, presided were other features of the meeting. The officers elected for 1928 were the following: Dr. E. A. Loomis, Minneapolis, secretary for Minnesota; Dr. Theodore Bratrud, Warren, councilor for Minnesota. Dr. A. N. Collins, Duluth, chairman for Minnesota; Dr. J. P. Aylen, N. D., chairman for North Dakota; Dr. V. J. LaRose, Bismarck, N. D., councilor for North Dakota; Dr. Murdock MacGregor, Fargo, secretary for North Dakota.

#### Office Position

A graduate nurse desires to return to office work. Is a competent stenographer. Address 422, care of this office.

#### Eye, Ear, Nose and Throat Assistant or Associate Wanted

Competent eye, ear, nose and throat man as assistant to established specialist, eastern South Dakota. Reasonable salary to start, partnership offer later. Full information on receipt of details as to age, nationality, family, health, training, experience, and salary expected first year. Address 427, care of this office.

#### Apparatus for Sale

Slightly used combination Alpine and Kromayer Lamp, in first-class operating condition. Will sell at a discount. Address 420, care of this office.

#### Position as Technician Wanted

Can fill a responsible position as laboratory and x-ray technician. Have had good training and experience under competent medical school heads. Address 423, care of this office.

#### Association Wanted

Association wanted with group or individual. Capable of general and urological surgery. Training in eastern hospitals, teaching and practice. Address 431, care of this office.

#### Laboratory Position Wanted

A woman with six months training in laboratory work, physiotherapy, and x-ray work desires position as doctor's office assistant or in an institution. Address 416, care of this office.

#### Wanted—An Internist

To become associated with a group of physicians in Minneapolis. Medical cases referred. Complete equipment for doing first-class diagnostic work, including X-Ray. Address 428, care of this office.

#### Physician's Office Equipment for Sale

The office equipment of the late Dr. E. M. Clay, of Hutchinson, Minn., including therapeutic lamp, violet ray machine, optical case, and office supplies, is offered for sale. Also a good opening for a physician. Address Mrs. E. M. Clay, Hutchinson, Minn.

#### Practice for Sale

Sixty miles from Minneapolis, in a prosperous town and surrounding country. Took in \$7,000 in cash in past fourteen months. Easy competition. Rent cheap. Will sell for \$300 for equipment, etc. Leaving soon for special work. Address 426, care of this office.

#### Apparatus for Sale

Complete X-ray equipment, including Acme-International 6-60 generator, standard radio and fluoroscopic tilt table, standard stereoscope, two Coolidge tubes, latest type Bucky diaphragm, and other accessories, all in first-class condition. Price very reasonable for quick sale. Address 429, care of this office.

#### Physician Wanted

Graduate of Class A Medical College and with good surgical internship to assist in general industrial practice of medicine on the Iron Range, Minnesota. Initial salary \$200 to \$300 per month. Tell everything employer should know about you in first letter. Photo and references. Address 425, care of this office.

#### Apparatus for Sale

All in perfect condition, good as new. One Hanovia Alpine Lamp; one Castle Electric Sterilizer (choice of small instrument sterilizer); one Brown-Bueger catheterizing and operating cystoscope with concave and convex sheaths (Wappler make) with current controller and irrigating stand; one instrument and dressing stand, glass and white enamel. Address 432, care of this office.



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## LORD LISTER\*

BY WILLIAM BOYD, M.D.  
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WINNIPEG, MANITOBA

The philosopher who examines closely into the nature of man in his search for the pure gold finds much that is dross; but, if he pursue his quest with diligence, he will find some hints of the sublime and beautiful, some traces of those clouds of glory of which the poet-philosopher speaks, and of these none is more deeply rooted than our strange tendency to hero-worship.

Most of us are pretty small fry. We wander through life like children in a museum, delighted with the strange things all around us, going out finally into the night, nothing done. "What is the course of the life of mortal men on the earth? Most men eddy about here and there, chatter and love and hate, striving blindly, achieving nothing; and then they die—perish. But there are some whom a thirst, ardent, unquenchable fires, not with the crowd to be spent, not without aim to go round in an eddy of purposeless dust." These are the men who stand out above and apart from their fellows, as Alpine peaks stand above the surrounding plain, and it is to these that man has turned right through the ages for help, and hope, and inspiration. These are the heroes, these are the men whom we delight to honor.

And so the cynic and pessimist is checked when in his inquiry into human nature he encounters this deep-seated idealism and hero-

worship. But, alas, he is checked only for a moment. For, after all, who are the heroes whom man delights to honor? Carlyle begins his lectures on "Heroes and Hero-worship" with Odin and Mahomet; he finishes with Napoleon. What are the names which every schoolboy knows? Alexander, Caesar, Hannibal, Charlemagne, Napoleon,—heroes who have led mankind to fields of slaughter and carnage, whose God has been personal ambition. Thus history celebrates the battlefields whereon we meet our death. Yet there are other heroes who have some claim upon our affection, men who have made the whole of the race their eternal debtors. Surely then we need to keep green the memory of these heroes, the real benefactors of mankind.

As we look into "the dark backward and abysm of time" we see poor man, the atom of a day, struggling with many dark and inscrutable problems, and of these one of the darkest is the problem of sickness, disease, and death. All through the centuries the bitter cry goes up, like a tale of little meaning, though the words are strong: "Life is sweet, brother." "Do you think so?" "Think so! There's night and day, brother, both sweet things; sun, moon, and stars, brother, all sweet things. Life is very sweet, brother; who would wish to die?" Yes, who would wish to die? And so through all the ages man has looked to the physician in his dire need and

\*A popular address delivered at the North Dakota State Medical Association at Grand Forks, N. D., June 1, 1927.

trouble. In the early days of the race, and still amongst primitive tribes, the healer of the body and the mind were one, the priest was the physician, the physician the priest; healing was a matter of divine intervention. But even in the early Greek literature we can watch the gradual evolution of thought. In Homer, when Apollo rained his deadly arrows of disease on the Greek host, the appeal was to him to cause the plague to cease. In Sophocles we find that Apollo is again appealed to, but this time only for knowledge which will enable man himself to fight the epidemic. Even in the 16th century we have the famous remark of Ambroise Paré: "I dressed his wound; God healed him." But with the passage of time we have come to realize that whilst the author of our being has endowed us with marvelous means of defense against disease, and has given us an intellect capable of grappling with any problem, man is left to work out his own salvation from the bodily ills which so grievously beset him.

Through all the centuries which have passed since the beginning of scientific medicine progress has been pitifully slow in the real art of healing. Looking down the vista of the years great figures tower aloft, but these for the most part are men who have opened our eyes to the meaning of the structure and function of the body and to its behaviour in disease, men like Vesalius, Harvey, Hunter, and Virchow. A few great drugs, as opium, quinine, mercury, and digitalis were known; surgical procedures, such as the amputation of limbs, were practiced, but over everything there hung a great darkness. Until the middle of the 19th century nothing was known as to the real nature and cause of the vast group of infectious diseases and those due to microorganisms.

But by the middle of the last century a curious position had arisen in surgery. The introduction of the use of anesthesia, in 1845, had served as a tremendous stimulus to the art; and now that the patient was no longer racked by torment during the performance of an operation surgeons began to extend their field of activity. But all such endeavors were checked by the conditions with which the surgeon found himself confronted in his hospital work. For in those days, indeed in the entire pre-Listerian era, the patient who entered the surgical wards of a hospital was confronted by strange and mysterious dangers, terrible in themselves and all the more terrible because they were seemingly so capricious. These dangers were the so-called surgical hospital diseases.

There were four principal hospital diseases; erysipelas, pyemia, hospital gangrene, and tetanus. It is difficult, indeed impossible, for us at the present day to picture the havoc which these diseases wrought in a surgical ward before the epoch-making year of 1865. Erysipelas would sweep like the burning fire it was throughout a ward. Pyemia would set up innumerable abscesses, accompanied by terrible shivering attacks and high fever, terminating in death. Hospital gangrene was in some ways the worst of these plagues. Tetanus in those days used to spread from patient to patient.

The wounds inflicted by the surgeon or resulting from injury were very different from the clean operation wounds with which many of you are familiar from personal experience. No one knew whether a wound would remain clean or go bad. In the latter case when the dressings were removed the edges of the wound were found to be red, swollen, and tender, whilst pus poured from between the inflamed edges. Every wound was in danger, every break in the skin. That is why a simple fracture of a bone, in which the skin is not perforated, was such a comparatively trivial matter, whereas a compound fracture often cost the patient his life. Milton's lines might have been written in description of some of the hospital wards of those days:

Despair tended the sick, busiest from couch  
to couch;

And over them triumphant Death his dart  
Shook, but delay'd to strike, though oft in-  
voked

With vows, as their chief good and final hope.

Over everything there hung the fetid smell of decomposition, although the surgeons of those days were so accustomed to it that they used to refer to it as the "good old surgical stink." It was the uncertainty which must have been so terrible. The element of chance or luck must have paralyzed surgery. The simplest and most successful operation might be followed by death. It was this element of chance which was so mysterious and so inexplicable. When one of these epidemics of hospital diseases was at its height the surgical wards of the Glasgow Royal Infirmary had to be closed, and the Nuremberg authorities actually contemplated pulling down their Allgemeines Krankenhaus because of a similar state of affairs. When a patient entered the Edinburgh Royal Infirmary he had to deposit a sum of money necessary to defray the funeral expenses. In 1863, when Pasteur had provided all the data necessary for the applica-



tion of the antiseptic principle, ten women in succession were sent for operation to a house in Paris and left it in coffins. In their terror the neighbors called it the House of Crime. Erichsen, the leading London surgeon of the day, said that the only remedy for a pyemic hospital was the pickaxe, and Sir James Young Simpson, of Edinburgh, the originator of chloroform anesthesia, made the famous remark that "the man laid on the operating table in one of our surgical hospitals is exposed to more chances of death than the English soldier on the field of Waterloo."

Perhaps the best way for us to realize the difference in surgery before and after Lister is to take a look at the surgical text-books of the early part of the nineteenth century. John Bell, in his "Principles of Surgery," written in 1801, gives the following description: "When hospital gangrene rages in a great hospital it is like a plague; few who are seized with it can escape. Every cure stands still. Every wound becomes a sore, and every sore is apt to run into gangrene. It has been named the 'Hospital Gangrene,' and such were its ravages in the Hotel Dieu of Paris that the surgeons did not dare to call it by its true name; they called it the rottenness, foulness, sloughing of the sore. The words, hospital gangrene, they durst not pronounce for they sounded like a death knell; at the hearing of that ominous word the patients gave themselves up for lost. Let the surgeons bear in mind then that this is a hospital, that outside the circle of the infected walls the men are safe. Let him therefore hurry them out from this House of Death, let him take possession of some empty house, let him lay the patients in a school room, in a church, or on a dunghill; let him carry them anywhere but to their graves."

When you contrast this picture with the surgical wards of our own hospitals, which any of you may have to enter, will you not agree that the man whom we honor tonight is indeed one of the great heroes of the world? Such was the state of surgery when our hero went to Glasgow, ready like another Hercules to "battle with custom, prejudice, disease."

It is not my intention to trace for you more than in outline the life and career of Joseph Lister. The details you will find in the splendid biography by his nephew, Sir Rickman Godlee, and in the beautiful Listerian Oration delivered at Ottawa in 1924 by his friend and former assistant, Dr. John Stewart, of Halifax. Born on April 5, 1827, the son of Quaker parents,

he early showed a strong bent toward science, fostered by his father, himself a distinguished fellow of the Royal Society and the man to whom we owe the achromatic lens and much of the perfection of the modern microscope. Lister studied medicine in London at University College Hospital, and after serving as house surgeon in that hospital he went to Edinburgh to continue his studies under Syme. The famous Edinburgh surgeon took a great fancy to the young Englishman, and the young Englishman did the same for Syme's daughter, with the result that he settled down to work there. In a letter to his father announcing his decision to pursue surgical work in Edinburgh the following passage is of interest to us, as giving a picture of the man: "I am encouraged to hope that though I must not expect to be a Liston or a Syme, still I shall get on. Certain it is I love surgery more and more, and this is a great point. Also I trust I am honest and a lover of truth, which is perhaps as important as anything. As to brilliant talent I know I do not possess it, but I must try to make up as far as I can by perseverance."

A little later we find him giving a course of lectures on the principles of surgery, extramural lectures as they are called at Edinburgh. And here we find a trait which characterized him throughout life. Of his introductory lecture, which occupied twenty-one foolscap pages, there were only three pages written on the morning before the lecture was due. He went to bed at two, got up at four, and finished the lecture in the cab which drove him to the lecture room. This cab incident was repeated on several occasions in later years when Lister had to deliver most important addresses before the most august bodies. He had always so much interesting work on hand that he could never bring himself to write until the last possible moment. Three years later his wife gives the following account of what we might call a rather close shave for an 8:30 lecture before a medical society: "When we went to dinner the paper on 'Spontaneous Gangrene' was in a most incomplete state, and it required considerable exercise of faith to believe that an hour's more work could bring it nearly to a close. However, about seven we resumed our labors, and how we did work. Joseph's dictating was really wonderful, keeping me writing as fast as I possibly could. About half past seven we sent for Mr. Craig. He was fortunately disengaged and came speedily. Joseph, still keeping my pen fully employed, instructed Mr. Craig in the preparation of the

trotters. (The paper was illustrated by demonstrations of the state of the blood in sheep's feet.) At last, at ten minutes past eight, a cab was sent for, a note or two jotted down for the conclusion of the paper, and off went Joseph and the manuscript and Mr. Craig and the trotters in the cab, and arrived just in time to take off his great coat and at once begin."

After seven years in Edinburgh Lister was appointed Regius Professor of Surgery in Glasgow University. A Regius professorship is a government appointment in which politics sometimes plays a part and the *Glasgow Herald* was rather incensed that this young man from Edinburgh should get the coveted position. In an editorial on the day following the appointment the writer exclaims: "Who is this man Lister? He has done nothing in the past. It remains to be seen if he will do anything in the future." This was in 1860, and it was in the wards of the Glasgow Royal Infirmary that the immortal work was begun, to be continued later in Edinburgh. We must not imagine, however, that the preceding years were not years of intense preparation. During all this time Lister had been studying inflammation by the experimental method, and had been pondering on the inscrutable mystery of wound infection and hospital diseases. While in Edinburgh he wrote some very important papers on the microscopic phenomena of inflammation. Indeed one would think that he had been preparing himself for the career of pathologist or physiologist rather than that of a surgeon.

We have now arrived at the year 1865, and I must ask you to consider for a few minutes the state of medical knowledge at that date in relation to the inflammation and suppuration of wounds. The true cause of the condition was of course unknown, and this was even more true of its prevention. It was thought to be an act of God for which the surgeon was not responsible, due to some mysterious noxious influence of the gases of the air, of the oxygen in particular. And as these gases were everywhere and could not be excluded the outlook appeared to be hopeless. And yet many facts were known, at least to some, facts which only needed the mind of the master to fit them into a key which would unlock this age-long mystery. The existence of germs and microbes had been known for centuries. Leeuwenhoek, the old Dutch janitor who made the wonderful lenses in the 17th century, peering through his microscope at the dirty water of the canal was the first to see these tiny animalcules swimming about. Only

two years before, in 1863, Davaine had discovered the first disease-producing bacterium, or rather had demonstrated its ability to produce the disease anthrax. Pasteur had published his researches on the fermentation of beer and wine. Lemaire had written a book on carbolic acid. Of all of these facts Lister was ignorant.

Then one day the professor of chemistry drew his attention to some papers by Pasteur showing that the fermentation of wine was due to the activity of minute living organisms, and that decomposition was due to the same cause. In these papers Pasteur demonstrated by a series of experiments which have never been surpassed for brilliance and simplicity that the decomposition of organic matter, of flesh and blood, was not an inevitable process, that if air was excluded from the flask in which it was contained it would remain sweet and undecomposed, that if air was admitted decomposition would commence at once, but that it was not the air itself or its oxygen which was responsible but the minute germs on the particles of dust floating in the air. These germs had long ago been revealed by the microscope, but they were regarded as accidental concomitants of putrescence, not as its essential cause. At one stroke the great French chemist had destroyed the age-long doctrine of spontaneous generation. In his famous lectures in 1864 before the French Academy of Science at the Sorbonne, he closed with these words: "And, therefore, gentlemen, I could point to that liquid and say to you, I have taken it from the immensity of creation, and I have taken it full of the elements fitted for the development of inferior beings. And I wait, I watch, I question it, begging it to recommence for me the beautiful spectacle of the first creation. But it is dumb—dumb ever since these experiments were begun several years ago; it is dumb because I have kept it from the only thing which man cannot produce—from the germs which float in the air: from Life, for Life is a germ and a germ is Life."

When Lister read these papers he realized in a flash the tremendous significance of Pasteur's work in relation to his own problem. He saw with the intuition of genius that what was true for the decomposition of organic substances outside the body was true for the suppuration and gangrene of wounds, and that it was possible, at least in theory, to prevent these calamities from occurring. Prince Kropotkin, in his "Memoirs of a Revolutionist," remarks: "There are not many joys in human life equal to the joy of the sudden birth of a generalization, il-



luminating the mind after a long period of patient research. What has seemed for years so chaotic, so contradictory, and so problematic takes at once its proper position within a harmonious whole." So it was with Lister.

We may imagine Lister's excitement and delight on reading these papers to find that the enemy he had been fighting blindly and unsuccessfully was not an all-pervading gas or some malign tendency in the human tissues, but living solid particles floating in the air, contaminating the surgeon's hands, contaminating his instruments, particles which could be destroyed by heat, by poisons, and perhaps by other methods. Our hero was now able to see, though not with the naked eye, his hidden enemy, and from now on he devoted the rest of his life to the forging of the weapons which would bring about its downfall.

Lister's object from the very beginning in those early days of 1865 was to prevent the germs from reaching the wound. This is apt to be forgotten by those who imagine that asepsis is something different and apart from antiseptics, that it is an advance on the methods known as Listerism. At first he thought that the only enemy to be feared was the dust in the air, but he soon realized that the surgeon's hands and instruments were a potent source of danger. In those days the surgeon would wash his hands after an operation in order to remove the blood, but such washing *before* the operation was regarded as an unnecessary luxury. The nurses were neat and trim, but the surgeon gloried in his old coat incrustated with the filth of years, just as a climber glories in his ice-axe scarred by many battles with the mountains. He passed from patient to patient using the same probe, the same sponges. Is there any wonder that infection spread like wild-fire?

In casting around for a weapon ready to his hand he remembered reading in the newspaper that carbolic acid had been used for preventing decomposition of the sewage at Carlisle with remarkable results, and he provided himself with some of the crude German creosote of those days. Curiously enough, he did not start with the simpler task of keeping a clean wound clean, but grappled, instead, with the infinitely more difficult one of attacking the germs in an infected wound. He chose compound fractures of bone for his first attempts.

In this address it is not possible to go into minutiae of technic. But what has struck me in reading Lister's original papers in the preparation of this address is the beautiful simplicity of

his methods, based in every instance upon a sure scientific foundation and checked by the keenest of clinical observation. It is an object lesson in the combination of the scientific and practical sides of medicine which every young surgeon would do well to study and take to heart. How different from the mental attitude of the writer of an editorial in the *Lancet* in 1875. This splendid example of the practical man wrote as follows: "The germ theory may be perfectly well founded; but nine surgeons out of ten do not care much whether it is or not, so long as they cure their cases and reduce their mortality to the lowest possible degree." At first the carbolic was applied in pure form, then combined with oil in the form of a putty, every fresh case suggesting some improvement or modification. The famous carbolic spray was pumped into the air by an enthusiastic student when it was thought that the germs of the air were the chief source of danger. But Lister was always experimenting in his laboratory, as well as in his ward, and when he came to the conclusion as a result of these experiments that the germs in the air were not a real source of danger he at once gave up the spray. His methods became ever more simple, and therefore less expensive. His results were published in a series of papers in the *Lancet* of 1867 and his success in these early cases, many of them of an apparently hopeless nature, was amazing. One wonders if any better results would be obtained in similar cases at the present day.

In this treatment of compound fractures, in which the wounds were heavily infected, his treatment was naturally antiseptic, for he had to attack the germs in the wound. But we soon find him employing what are now called aseptic methods; namely, the prevention of germs reaching the clean wounds made by the surgeon himself. Here again he was equally successful, and his success was due to that characteristic of genius which he possessed in such large measure, the infinite capacity of taking pains.

And what of the ultimate result? The ultimate result was not only the abolition of the old hospital diseases but the birth of modern surgery. In 1867 he was able to report that during the past nine months not a single case of pyemia, erysipelas, or hospital gangrene had developed in his wards. And this was certainly not because of the salubrious situation of those wards, for within a few yards of the windows were buried the piles of bodies of those who had died in the great Glasgow epidemic of cholera a few years previously, the top layer

of coffins coming to within a few inches of the surface. At the Krankenhaus, at Munich, 80 per cent of the wounds were at one time affected by gangrene. After the introduction of Lister's methods Professor Nussbaum reported that "from that day hospital gangrene ceased in the Krankenhaus."

As I have said, it was the birth of modern surgery. The advances which surgery made before Lister were microscopic compared with those made after him. Lucas-Championnière, the great French surgeon, went so far as to say that "the whole of surgery was born from Lister, that active surgery—the surgery of operating—began with him." In Saint Bartholemew's Hospital in 1865 there were 370 operations of which 78 were amputations, in 1912, with a smaller number of surgical beds, there were 3561 operations, of which only 25 were amputations.

Abdominal surgery was then hardly thought of and the mortality was fearful; now it forms a large part of the surgeon's work. In those days to open one of the large joints was criminal because of the risk of pyemia; nowadays no one thinks anything about having his knee-joint opened and a loose cartilage removed. Formerly the only operation performed on the chest was the opening of an empyema; the surgery of the chest has now become one of the most interesting branches of operative work. The cavities containing the brain and spinal cord were then untouched; now the brain can be exposed and a tumor removed without any fear of sepsis developing. The ophthalmic surgeon depends for his operative work on the eye entirely upon complete asepsis, and for the obstetrician absolute asepsis is likewise of paramount importance.

This will give you a slight idea of the incalculable debt which medicine owes to Lister, and not only medicine but all mankind. When you enter an operating theater now you see the white-robed surgeon, the nurses, and anesthetist, but there is something which you do not see, for over all there is Lister's brooding presence.

If you will look a little more deeply into the history of the antiseptic method than we have time to do this evening you will find that other men were also on the track, other men had also tried to keep wounds clean, other men had even used carbolic acid. It may seem, therefore, that the step which Lister made was but a small one. It was a small one, but it took a giant to make it. Had he not had the horses of genius in harness he would not have traveled far. He was the great exemplar of Pasteur's remark that "in the field of observation chance only favors

the mind which is prepared." He possessed that combination without which no supreme scientific discovery is possible,—imagination combined with unlimited patience and industry for the working out of details.

Some of you may remember the remark of Kekulé of benzene ring fame. "Let us learn to dream, gentlemen, then perhaps we shall find the truth. But let us beware of publishing our dreams before they have been put to the proof by the waking understanding." The greatness of Lister lay not in discovering the relation of germs to decomposition, which he did not do, not in inventing carbolic acid, which of course he did not do, but in demonstrating, with the beauty, the simplicity, the finality of Pasteur's methods, the whole truth of sepsis and anti-sepsis so that forever after no man could doubt.

There were forerunners. There always are forerunners. "A discovery is rarely the work of one mind. It is one observation added to another that makes the supersaturated solution from which the crystal of truth at last precipitates." Lister could not have done without Pasteur who started his bacteriological career by discovering that the fermentation of wine was produced by the action of living animalcules, the yeasts. But before Pasteur there was Cagniard de la Tour, who, in 1837, had observed the yeasts in beer vats putting out little buds, and, therefore, concluded that they were alive, and that without their help, the beer could not be made.

Pasteur stands before the world as the destroyer of the theory of spontaneous generation, but that remarkable Italian, the Abbé Spallanzani, born away back in 1729, had already proved that when all the germs in a fluid are killed, new germs can arise only by coming in from the outside. And Spallanzani himself was preceded by the queer old Dutch janitor Leeuwenhoek, who ground lenses such as no man had ever made, and, looking through these lenses 250 years ago he was the first of all men to see and describe these vast though minute cohorts of death which have lived on the earth as long as man himself, but of whose existence no man ever dreamed. But do not misunderstand me. Leeuwenhoek did not guess that these minute creatures could possibly produce disease; nor did Spallanzani. It was Davaine, and above all the founder of the real science of bacteriology, the great German, Robert Koch, who proved conclusively that most of the diseases from which we suffer are due to micro-organisms. What an international story it is:



first Holland, then Italy, France, Germany, and finally England.

One of the most illustrious and tragic figures amongst the forerunners was that of the Hungarian Semmelweiss. Away back in 1847 he had applied himself to the appalling problem of puerperal fever, that terrible complication of childbirth which turned the maternity hospital into a veritable house of the dead. In that year Semmelweiss showed that the fever was not due to the action of some mysterious gas, but was due to material introduced by the hands of the doctor. He proved his point, and brought about an amazing reduction in the mortality in the maternity wards of the Vienna Allgemeines Krankenhaus, but, lacking Lister's greatness, he failed to prove it to the satisfaction of others, his teaching was received with derision, the walls of prejudice and custom would not fall before his feeble trumpet, and he died embittered and broken-hearted in an asylum. His work died with him, and Lister had not even heard his name in 1865. And twenty years later when Lister visited Budapest, the native city of Semmelweiss, the name of that illustrious man was never even mentioned, having apparently been forgotten by his own town as by the world at large.

Lister's own path was not an easy one. In Glasgow and in Edinburgh, where he was appointed Professor of Surgery, in 1869, and where he did some of his most important work, his views were gradually accepted, but in London, where he was called to the chair of surgery at King's College Hospital, in 1877, he encountered an incredible amount of opposition, and his classes were miserably attended, a sad contrast to the great crowds who used to hang upon his lips in Edinburgh. He returned to his own country, and his own received him not. In Edinburgh his class used to number 400, but in London sometimes not more than 6 were present, nor was he known to the general public. Sir St. Clair Thomson tells how, soon after starting practice, he thought he would strengthen his position by mentioning (quite casually of course) that he had been house-surgeon to the great Joseph Lister. "Yes," said the patient, "a great man: he must have made a pile of money out of Listerine."

I like to picture our hero carrying on his lonely struggle with disease, even as Hercules of old struggled with Death for the body of Alcestris. Like Hercules he set out to cleanse the Augean stables of the surgical wards, and he left them pure and sweet. But in the end

truth won, and world-wide recognition came to the greatness of the man and of his achievement. In 1883 he was made a baronet. In 1895 he was elected president of the Royal Society. In 1897 he was raised to the peerage. In 1902 when the Order of Merit was instituted he was one of the original twelve who received that proud distinction.

But now the burden of the years was beginning to bear him down. He seems to have lost his hold on life when his wife died some years before, for she was the truest and most loving helpmate that any man could have. He ever looked forward to the day when he would join her in a new life, and on February 10, 1921, he quietly passed away. The Royal Society and the Royal College of Surgeons petitioned that he be buried in Westminster amongst England's glorious dead, and the Dean of Westminster agreed, but Lister had wished to lie beside his wife, so after a great and solemn service in the Abbey the coffin was taken to the West Hampstead Cemetery, in which vast city of the dead the simple tomb where he and Lady Lister lie may, after much search, be discovered. The *Times* obituary notice said: "No panegyrics are needed; the greatest modern Englishman is dead."

Such was the life and the work of the man who, it has been said, has done more for the relief of suffering, for the prevention of anxiety, and for the promotion of human happiness than any man who has ever lived in the tide of time. And what kind of man was he? He was not only great but good, a rare combination of strength, sweetness, and gentleness. Garrison, in his "History of Medicine," remarks that as the Quaker is the Puritan transposed into a softer and more grateful key, so Lister's nature had those elements of sweetness which proverbially can come only out of strength. When Lister was asked what was the first requisite for a really first-rate surgeon he used to say: "A feeling heart. People do not always believe me. But it is so." More than any man of whom I have read he seems to exemplify in his life that lovely line of the hymn "Truth in its beauty and love in its tenderness." Dr. John Brown, the author of "Rab and his Friends," once said of him: "You have only to look at his face to see how uninjured he has been in his walk through life." With his courtly manners and his indomitable courage he was like some knight of the round table. "And thus he bore, without abuse, the grand old name of gentleman." Sir W. Watson Cheyne, who was with him both in Edin-

burgh and London, says that he never heard him speak ill of any one. Dr. John Stewart, of Halifax, who also accompanied him from Edinburgh to London, wrote: "It is beyond my power to express the feeling of reverence and love I have for Lord Lister, or to say how much his life has been to me."

Henley the poet, who was a patient of Lister's in the Edinburgh Royal Infirmary, gives a picture of the Chief:

"His brow spreads large and placid, and his eye

Is deep and bright, with steady looks that still.

Soft lines of tranquil thought his face fulfill—  
His face at once benign and proud and shy."

His attitude towards his profession is best illustrated by these words from his Graduation Address to the Edinburgh students in 1878: "If we had nothing but pecuniary rewards and worldly honors to look to, our profession would not be one to be desired. But in its practice

you will find it to be attended with peculiar privileges, second to none in intense interest and pure pleasures. It is our proud office to tend the fleshly tabernacle of the immortal spirit, and our path, if rightly followed, will be guided by unfettered truth and love unfeigned. In the pursuit of this noble and holy calling I wish you all Godspeed."

And so in this year of commemoration we remember and say farewell to our hero, and in doing so we cannot do better than repeat the words of Handel's lovely anthem, which was sung by the boys' choir at his funeral in Westminster Abbey: "When the ear heard him, then it blessed him, and when the eye saw him it gave witness of him; he delivered the poor that cried, the fatherless, and him that had none to help him. Kindness, meekness, and virtue were on his tongue. If there was any virtue, and if there was any praise, he thought on those things. His body is buried in peace, but his name liveth forevermore."

## RADIUM THERAPY

By CHARLES FRANK MORSMAN, M.D.

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The world owes a debt of gratitude to the scientists who, through their vision, energy, and labor, placed radium in our hands. It has been called the mystery metal, but much of the mystery which at first surrounded it has been dispelled by scientific research.

It was the discovery of the Roentgen ray that induced physicists to experiment with various substances to determine whether chemical bodies give off similar rays. Professor Henri Becquerel found that certain salts of uranium gave rise to rays that affected photographic plates.

G. S. Schmidt and Mme. Curie, working independently, found that thorium is radioactive. M. and Mme. Curie continued the investigations. Mme. Curie is given the credit for the actual labor involved in these investigations, though advised and encouraged by her husband. They found that certain uranium ores gave evidence of another substance which they named *polonium*. This substance is now known as Radium F.

Radium was first extracted from pitchblende residues by M. and Mme. Curie. It is not obtained from pitchblende and other minerals containing uranium. It is only in uranite and car-

notite that radium occurs in workable quantities. Finally (in 1910) Mme. Curie and Debierne isolated radium in pure metallic state. Radium is found widely distributed throughout the world.

It is estimated<sup>1</sup> that in 1923 there was in use in the United States one hundred and fifty grams of radium. It was worth approximately twenty million dollars. Around 90 per cent of it was derived from the carnotite deposits in Colorado. From two hundred to four hundred tons of radium ore must be worked to secure one gram of radium. Since the discovery of the radium deposits in the Belgian Congo, practically all radium is obtained from them. It is said that the Congo ore is fifteen times as rich in radium as the Colorado ore. The Congo radium ore must be transported about two thousand miles down the Congo River and across the Atlantic to Antwerp.

Approximately equal quantities of radium ore and acids are required in the extraction of radium. It is not practical to extract radium where the ore is found. About two thousand two hundred separate crystallizations are required to produce radium chlorid in 95 per cent purity. By fractional crystallization radium bromid is obtained. By chemical processes



this substance is changed to soluble radium chlorid and to insoluble radium sulphate. Soluble radium chlorid is used to obtain radium emanation and insoluble radium sulphate is used for making various types of applicators.

It is thought best by many radium therapeutists to use radium emanation instead of radium sulphate. However, there are objections to the emanations. The apparatus which is used for collecting the emanations is expensive. The Failla modification of the Debierne-Duane apparatus for the extraction, purification, and concentration of radium emanation is not practical if less than one-half gram of radium element is available. The half decay period of radium emanation is 3.85 days.

Few radium workers can afford the apparatus and the quantity of radium from which to extract the emanation. If one lives at a distance from the place where radium emanation is extracted the deterioration of the emanation when applied may be so great as to render its application partially ineffective. The majority of workers who employ radium in therapeutics are content to use radium sulphate. It is contained in metal needles, metal or glass capsules, and in plaques. Many are advocating and using needles exclusive of other containers. These may be sterilized by boiling in water, which greatly lessens the tedium of applications. It is not safe to sterilize glass capsules in boiling water because of the danger of breakage. They must be sterilized with chemicals. The various containers must be sterilized since radium has no trustworthy effect upon the micro-organisms of infection, though it is generally accepted that the beta rays have a decided bactericidal action.

It is not wise to attempt the treatment of most conditions that are influenced by radium with an inadequate supply of the precious metal. It is generally thought that under the usual conditions the application of a large quantity of radium for a short time is better than the application of a small quantity for a long time, even though the different applications may amount to the same in milligram hours. However, there are exceptions to this rule; indeed, we are warned that it is likely that too large a dose of radium rays is as harmful as too small a dose.<sup>2</sup>

A good many radium workers believe that one hundred and ten milligrams of radium of highest purity are adequate for a working unit. This, however, is usually no more than enough to treat one patient at a time. It is much better to have at one's command twice the above quantity. At the market price of seventy-two dollars

per milligram this requires an investment of fifteen thousand eight hundred and forty dollars in radium alone, not taking the accessories into account.

It was at one time considered that the beneficial effects of radiation were due to the destruction of the abnormal cells. Time and experience have so changed our opinion in this particular that radiologists<sup>3</sup> are now boldly stating that normal tissue resists the growth of pathological tissue and that radiation weakens the tumor and gives the normal mechanism of cure a chance of overcoming the disease.

Radium is indicated in many conditions. In some it is used alone. In other conditions it is combined with the Roentgen ray or surgery. Practically all superficial lesions are readily amenable to treatment with radium. In a monograph,<sup>4</sup> published in 1916, the author stated that, at the time of writing, radium was receiving more than its share of notoriety as a cure for cutaneous cancer. He ventured the statement that it seemed to be going through the same periods that the Roentgen ray had. At first it created wild enthusiasm, then deep disgust, and finally found its true place.

It would appear that radium has found its true place, not only as a therapeutic agent in the treatment of cancers of the skin, but in the treatment of other conditions, as well. Physicians who are not familiar with the use of radium are prone to believe that it may be applied only in malignant growths. Radium is especially useful in non-malignant conditions. Toxic goiter, uterine fibroids, uterine hemorrhage, tubercular adenitis, angiomas, and many types of skin lesions are susceptible to the powerful rays of radium.

The conditions most favorable for radium therapy are the following: cancer of the uterine cervix, lip, tongue, and skin, lupus, leukoplakia, keloids, warts, moles, and nevi. In the following conditions and locations radium is used with more or less success: cancer of the rectum, urinary bladder, prostate, mucous surface of cheek, maxillary antrum, esophagus, and larynx. It is useful in uterine fibroids, Graves' disease, leukemia, Hodgkin's disease, lymphosarcoma, hypertrophic tonsils, nasal polypi, vernal catarrh, trachoma, enlarged thymus, glaucoma, and cataract.

Woodell<sup>5</sup> writes that radium is indicated in the following conditions of the uterus: for simple fibroids, where the uterus does not extend above the umbilicus, in endometritis and myometritis without complicating pathologic

conditions necessitating hysterectomy, in so-called idiopathic metrorrhagia, in early carcinoma of the uterine cervix, whether or not a panhysterectomy is to be done, and as a palliative.

He states that the contra-indications for use of radium in utero are as follows: cachexia, fibroids as large or larger than a four month's pregnancy, tumors causing pressure symptoms, cervical fibroids causing distortion of the cervical canal, young women, patients having acute pelvic inflammation or abscess, or in broken down, infected, or calcified myomata.

In an interesting article Withers<sup>6</sup> gives us the relative value of radium therapy in ophthalmology. His article is so valuable that one can profitably survey the following outline of it: the conditions for which treatment by radiation is the method of choice are basal cell carcinoma, epithelioma of the cornea at the corneoscleral juncture, undifferentiated sarcomas, including glioma, lymphosarcoma and giant cell sarcoma of the orbit, myeloid and lymphoid deposits, including chloroma and Hodgkin's disease, angiomas including hemangiomas, cirroid aneurysms, port-wine stains, vascular nevi, lymphangiomas, lymphangioma tuberosum multiplex, and spring catarrh. The conditions in which the use of radium is of proven value, but not necessarily the method of choice, are adenoid cystic carcinomas of the salivary gland type, arising in the skin and lacrimal apparatus, prickle-cell carcinomas, sarcomas and orbital melanomas of differentiated cell structure, including fibrosarcomas, adenosarcomas, not including chondromas or osteomas, actinomycosis, blastomycosis, lupus vulgaris, and lupus erythematosus. The conditions in which radium may be used where more traumatizing procedures are contra-indicated are cataract, pterygium, nevus, papilloma, xanthelasma, cicatrices, keloids, trachoma and its complications, and pannus. The conditions in which experimental applications of radium are justified because of favorable results in pathologically similar conditions in other locations, or of radiosensitiveness of the particular cells involved, are phlyctenular keratitis, phlyctenular conjunctivitis, tuberculosis of the cornea, or conjunctiva, keratoconus, chronic dacryocystitis, metastatic growths, and blepharitis, and to relieve pain.

In an excellent article Lane<sup>7</sup> gives the following among her conclusions: "Radium is of distinct value in treating many benign affections of the eye. It is a specific in vernal conjunctivitis, trachoma, and certain lid lesions. Radium gives

promise of being a valuable aid in the treatment of ulcers and opacities of the cornea, and probably in some affections of the deeper eye structures. Radium offers less scarring, greater freedom from pain, less loss of time from work, and more sightly results, than surgery, in many diseases about the eyes and head."

Where radium is properly applied in neoplasms of the rectum, it causes a definite inhibitory and destructive effect in the majority of instances.<sup>8</sup> In this condition radium treatment may be combined with surgery. Laparotomy often gives the best avenue of approach for placing radium, though the proctoscope usually brings the affected area into proper view. Colostomy is performed to relieve irritation of the growth and when impending obstruction warrants. Surgery alone has done little for this condition. Perhaps radiation and surgery together will be more successful.

Birth-marks are treated with radium with varying success. Parents frequently expect that nevi will promptly be removed completely. It is well that they should be informed before treatment is begun that a year or two will be required to treat such a condition and that complete removal of the disfiguring marks can scarcely be expected. Overtreatment is to be avoided since disfiguring scars and telangiectasis will surely result from too vigorous applications of radium.

The leucemias symptomatically respond more or less to radiation. A great deal can be done for splenic leucemia. The victim of this disease responds promptly to the proper application of radium. Unfortunately the result of radium therapy in these conditions is not permanent. Radium application gives to these doomed patients some respite from their most serious symptoms and probably delays death to some extent.

True Hodgkin's disease has responded well to radium treatment. Since there are no characteristic blood changes in this disease it may be confounded with sarcoma. In fact, it may be that Hodgkin's disease and round cell sarcoma of the lymph nodes are only different expressions of the same process. It is not advisable to promise the patient too much when beginning treatment of markedly large glands.

Radium therapy is probably as effective as surgery in the treatment of Graves' disease. The day I write this paragraph I have had the pleasure of re-examining such a patient whom I treated with radium a year ago. She came then with all of the classical signs of exophthal-



mic goiter including tremor, emaciation, and proptosis. Her basal metabolic rate was plus 108 per cent. To-day she exhibits no tremor, and the exophthalmos has disappeared. She has gained fifty pounds in weight, and the basal metabolic rate is plus 2 per cent.

We are all aware of the fact that there are periods of remission in Graves' disease. Time will tell whether or not the patient is permanently cured by any treatment. Radiologists have been favorably impressed with the striking results obtained by this form of treatment in this serious disease, and some are advocating that surgery give way to radiation therapy in all toxic goiters.

Radium is sometimes used to bring about tissue changes in hypertrophic tonsils. It is probably best to leave this condition to the surgeon except in patients who for definite reasons are not considered able to well withstand operation. Patients have been taught by the surgeons to believe that the tonsils must be entirely removed. Consequently patients are not satisfied with the results of radium treatment of enlarged tonsils. Radium does not entirely remove the tonsil, but merely lessens its size. It apparently matters not to the patient that the tonsil after radium treatment remains symptomless. The usual patient cannot believe that success has been attained until every vestige of the once troublesome tonsil has been entirely removed.

Radium therapy is far superior to surgery in the treatment of cancer of the lip. The knife should never be used on the lip itself. Thorough radiation of the cervical glands and block-dissection of the glands of the neck must be employed in a good many patients.

Cancer of the tongue should be treated by properly placed radium applications. This condition must be treated vigorously and as early as possible.

Cancers of the floor of the mouth or the inside of the cheek must be treated early and persistently if success is to be attained in these serious conditions.

In cancer of the bladder it is best to open the bladder and apply the radium directly to the lesion. In this condition the cancer growth should be destroyed as nearly as possible by electric coagulation before radium treatment.

Practically all cancers of the esophagus are far advanced when first seen by the radiologist. Radium treatment offers some chance of temporary relief, but practically all patients who suffer from this condition die of it.

Some hope of success may be promised in

cancer of the larynx if the condition is not far advanced. Some patients have apparently been cured by radium treatment.

Every lump in the female breast should be regarded with suspicion. When it is possible clinically to diagnose cancer of the breast the time for cure usually has gone. Radiation by the Roentgen ray before and after complete removal of the breast and axillary glands apparently offers the greatest degree of success. The problem here as in other cancers is to examine and treat our patients early. It is only by persistent education of the public that we shall be able to reduce the mortality from this highly fatal disease.

Radium therapy is especially valuable in gynecology. In the obscure menorrhagias of adolescence and the menopause the results of intrauterine application of radium are often most satisfactory. It is said that radium was first employed in 1905 for fibromyoma of the uterus. Some maintain that this form of treatment should give way to surgery if the tumor is larger than a three months pregnancy. Many radiologists do not regard the size of the tumor itself as a contra-indication to the use of radium. Great care must be exercised in the use of radium about the pelvic organs of girls and women in the child-bearing period of life, because overdosage will bring about artificial menopause.

In cancer of the cervix some are now of the opinion that radium treatment alone should be employed. In this condition surgery has been very disappointing. Perhaps radium therapy will be more successful. Even though one believes that surgery is the method of choice in cancer of the cervix there are those patients who come under observation so late that the condition is clearly inoperable. When these patients come to us we can offer them palliative treatment by means of radium that will lessen their discomfort and pain and markedly prolong their lives. In a small percentage of inoperable cancers of the cervix radium will bring about a cure.

A sharp line of distinction should be drawn between cancer of the cervix and cancer of the fundus of the uterus. In the latter condition surgery should always follow the intrauterine application of radium. Hysterectomy should be employed following radium treatment of cancer of the body of the uterus even though the disease is advanced.

Radium is successfully applied in those conditions which bring about nasal polypi. After polypi have been removed surgically their recurrence may often be prevented by radium ap-

plications. It is well known that the underlying cause of nasal polyi is inflammation which involves either the nasal mucous membrane or accessory nasal sinuses. Simple removal of polypi will not usually effect a cure. In the majority of instances the anterior and posterior ethmoid cells are affected. Polypi should be removed, the offending sinuses curetted and the radium application made the next day and repeated once a week. In the opinion of many it is better to employ surgery alone in these conditions.

In the treatment of cancer of the maxillary antrum it is best to first employ electrocoagulation. The hard palate of the affected side should be treated by this means. The actual cautery may be employed instead of electrocoagulation. An opening is thus made into the antrum, affording easy access for the application of the radium.

It is with epithelial growths of the skin, both benign and malignant, that the most satisfying results may be obtained by radium therapy. These conditions are readily diagnosed and are always easily accessible for pathological study and for treatment. The earlier treatment is begun in these conditions the greater is the probability of cure. Even now, after years of successful treatment of these conditions, one is often shocked by the extreme skin lesions which are occasionally encountered.

Benign precancerous skin lesions and early cancers and late cancers of the skin all respond to radiation by radium. Warts, subepidermal nodules, tuberculous and some other ulcers, sinuses, malignant warts, adenocarcinomata, epithelial hypertrophy, spindle-celled cancers, cubo-celled cancers, and basocelled cancers of the skin all respond to radium treatment alone or in conjunction with other treatment.

It is always well to think of present and future cancer when a patient comes for advice relative to persistent skin lesions. We all know that if we are to lessen the present high death rate from cancer we must do it by treating the precancerous conditions which we see so often. It is never wise lightly to dismiss the patient who consults us for a wart, mole, or small ulcer of the skin or mucous membrane, for by so doing we may be condemning another human being to death from cancer.

It is a lamentable fact that often patients are first seen by the radiologist after all chance of recovery is past. This is, no doubt, because many patients do not present themselves for examination until after the symptoms are severe. In spite of the delay in treatment a small per-

centage of the apparently extreme conditions are brought under control by the proper use of radium and the patient's life prolonged and his suffering lessened.

We do not as yet know the cause of cancer. Until the cause has been discovered and proved we may select from the several theories which have been advanced the one which best suits us individually. We may think of the cause of cancer as due to congenitally displaced epithelium, to changes in tissue balance, or to micro-organisms. It is certain that age, sex, race, heredity, trauma, irritation, light, and occupation are all factors to be considered in the problem of cancer production.

Whatever the real cause of cancer we are sure that we are making some progress in the field of prevention against this dreadful disease by the proper treatment of early cancer and precancerous conditions. Radiology has a large part in this progress. Radium may be depended upon to destroy precancerous conditions and some early cancers if they are within reach so that the application may be made directly. If the condition has advanced too far for cure then by proper radiation we may bring about some relief from distressing conditions.

If the disease with which a patient suffers is incurable, the physician has not fulfilled his obligations by merely stating the fact. The conscientious physician endeavors to cure disease, to alleviate pain and discomfort, to lessen mental distress, and to prolong life. If he cannot effect a cure in chronic disease, he can always make the patient's life more bearable. It is his duty to do so.

Radium must not be considered to be a cure-all. However, it should be maintained that radium is the best agent yet employed in certain conditions that are comparatively easy of approach so that, in proper containers, it may be applied directly to the site of the pathological condition.

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## MODERN ASPECTS OF THE DIAGNOSIS AND TREATMENT OF TUBERCULOSIS—PART III—Continued

By J. ARTHUR MYERS, Ph.D., M.D.

MINNEAPOLIS, MINNESOTA

## XV.—THE PREVENTION OF TUBERCULOSIS

That tuberculosis is a preventable disease is evidenced by the rapid decline in the death rate during the last half century. During that time in New York City the tuberculosis death rate has fallen 77.9 per cent. In Germany and England the decline in the death rate has been approximately as great as in the United States. Emerson believes that the causes of the rapidly increasing fall of the tuberculosis death rate in the last five years may be divided into three main groups as follows: first, specific measures directed intentionally against the spread of tubercle bacillus from the tuberculous to the non-tuberculous; second, accessory factors which help to build up the resistance of contacts and susceptible persons or inform the public regarding self-protection; third, accidental factors. These measures and factors which Emerson presented and discussed are as follows:

## SPECIFIC MEASURES

"Early and accurate diagnosis of all forms of tuberculosis and especially of the pulmonary form at special public dispensaries, as well as by the private practitioner of medicine.

"Bacteriological diagnosis of specimens of sputum from those suspected of having pulmonary tuberculosis.

"Notification of tuberculosis as a communicable disease to the officers of public health.

"Segregation in a manner to diminish, if not wholly to prevent, the distribution of the tubercle bacillus from those with 'positive sputum' to others, during the active or open carrier stages of the disease. This includes sanatorium treatment, or its equivalent, under skilled medical and nursing direction, of those in the active stages of the disease, whether showing 'positive sputum' or not, to abbreviate periods of activity or relapse and to accomplish early and more nearly permanent arrest of the disease.

"Home nursing services for the education of families in which one or more cases of tuberculosis are under the care of a private physician or dispensary, so that the resistance of the members of the family may be raised to and maintained at a level which will reduce the probability of development of active stages of the

disease, and that infectious discharges of the patient in the form of sputum spray and saliva and in eating and toilet articles often used in common, may be promptly destroyed or rendered innocuous.

"Enforcement of laws and ordinances designed to reduce the habit of spitting in public places where the opportunities are great for the fouling of shoes, clothing and articles of common use by discharges from the respiratory tract.

"Enforcement of laws and ordinances forbidding the common use of such articles as drinking cups, eating utensils, towels, etc.

"The compulsory pasteurization of milk and milk products, except such as come from herds or cows proved to be free from tuberculosis.

"Exclusion of parts or all of the carcasses of animals slaughtered for food purposes in which gross tuberculous lesions are found before or after slaughtering.

"Examination and exclusion of those found to be suffering from active or open tuberculosis from industries concerned with the handling and serving of food.

"The control of flies, especially in homes and in hospitals or sanatoria, where active open cases of tuberculosis are under care, and where food is prepared and served."

## ACCESSORY FACTORS

"Reduction in infant mortality and in particular the maintenance of the nutrition of infants by breast feeding, unless the mother is tuberculous.

"Nutritional protection and assistance for children, in particular from two to six years, and in general for all children until they have attained maturity or have left school control.

"Open air classes for anemic, undernourished and pretuberculous children.

"Education in the principles of healthy existence and the natural laws upon which growth, development and vigorous maturity depend.

"Housing or tenement house reform, including control of the number of persons who may legally occupy certain premises, rooms or apartments for residence purposes, and of the extent and character of gainful occupations that may be engaged in, in living premises.

"The elimination, by enforcement of laws or

by trade regulations and agreements, of those conditions in industry which have been shown to contribute by mechanical or chemical injury of the respiratory tract to the development of tuberculosis among industrial workers."

#### ACCIDENTAL FACTORS

"Racial changes in our population due to unrestricted immigration of the Jewish people, especially from Germany, Russia and Poland up to 1914 and the limitation of all immigration since that date and more particularly since 1917.

"War service, by putting under favorable conditions of hygiene and nutrition many men of twenty-one to thirty-one who had never had the benefit of such care.

"Expansion of industry, high wages, shorter hours, more continuous employment (1915-1919) with resulting increase in expenditures for housing, food and clothing.

"Prohibition, limited July, 1917, general January 16, 1920.

"Influenza, 1918-1919.

"Climate."

It has been demonstrated in the United States that beyond all doubt the incidence of tuberculosis may be greatly reduced through preventive measures. Through the kindness of the Metropolitan Life Insurance Company a large sum of money was placed at the disposal of the National Tuberculosis Association in 1916 for the purpose of making a special demonstration. For this demonstration a committee was appointed of which Dr. E. R. Baldwin was chairman. Dr. Donald B. Armstrong was made executive officer and Framingham, Mass., was selected as the demonstration city. In this city of 16,000 people the demonstration began in December, 1916, with an attempt to solve the following four community problems: first, to discover and place under adequate medical nursing and relief supervision all cases of tuberculosis, incipient and advanced, active and arrested; second, to ascertain with some degree of definiteness the responsible social and economic factors in disease causation, particularly as regards tuberculosis; third, to utilize in the most efficient way the existing means for discovery and treatment of tuberculosis and to find out what percentage of disease is preventable; fourth, to find and organize the best community health machinery for preventing sickness and death from tuberculosis. This demonstration closed December 31, 1923, and the following resolutions passed by the National Tuberculosis Association at its Annual

Meeting in 1924 contain some of the remarkable accomplishments:

"WHEREAS, The National Tuberculosis Association has received the final report of the Framingham Community Health and Tuberculosis Demonstration; and

WHEREAS, The Demonstration operating since January 1, 1917, to December 31, 1923, has in these seven years achieved notable success along a number of lines, to wit, the following:

(a) A decrease of 9 per cent in the general death rate under the average for the pre-Demonstration decade;

(b) A decrease of 40 per cent in the infant mortality death rate under the year preceding the Demonstration;

(c) A decrease of 68 per cent in the tuberculosis death rate under the pre-Demonstration decade average, as compared with a decrease of only 32 per cent in the control towns;

(d) An increase in the percentage of early stage cases of tuberculosis discovered during the Demonstration from 55 per cent to 88 per cent;

(e) An increase of from 15 to 50 per cent of tuberculosis cases treated in institutions; and

(f) An increase in the total amount of expenditure for health work in the community both by public and private agencies during the Demonstration from \$6,400 to \$43,000, or from approximately 40 cents per capita to \$2.40 per capita per year; and

WHEREAS, These results of the Demonstration have been of inestimable benefit to the campaign against tuberculosis in the United States and have set a standard for municipalities and other communities throughout the world; therefore, be it

RESOLVED, That the National Tuberculosis Association hereby desires publicly to express its thanks to the Metropolitan Life Insurance Company for providing the funds with which to carry on this Demonstration, to the special committee of the National Tuberculosis Association, which was responsible for the general supervision of the work; and to the Demonstration staff which labored faithfully to bring about the results recorded above."

When the tuberculosis curve is compared with the curves of five other causes of death it will be seen that it takes its greatest toll in the most productive years of human life. This fact alone should stimulate physicians everywhere to enter into the campaign of prevention.

Calmette's work on vaccination of new-born infants against tuberculosis promises to be helpful in preventing the disease during the first two



years of life when it is so destructive. "After having prepared successively over a period of thirteen years, 230 cultures, a race of bacilli was obtained that lost all its former property of producing tuberculous lesions transmissible in series. But this new race of bacilli retained the property of producing tuberculin and of calling forth the formation, in the organism, of tuberculous antibodies . . ." About one-half hour before nursing, a small teaspoonful of an emulsion mixed with milk and containing four hundred million of these tubercle bacilli is given the infant by mouth. The first dose is administered on the third day, a second similar dose on the fifth day, and a third dose on the seventh day of the infant's life. This preventive measure is used in homes where open tuberculosis exists and the infants are subjected to much contact exposure. Already Calmette has shown that *"mortality from tuberculosis under one year of age, for those infants vaccinated from one to two years before June 30, 1926, is less than 1 per 100."*

"Compare this with the fact that mortality of children of the same age *not vaccinated and born and reared in contaminated families, is at least 25 to 100* according to the investigation that we have been making in various countries."

From Calmette's work, therefore, it seems possible to vaccinate infants against tuberculosis with a reasonable degree of success. If this method can be generally applied to infants thus tiding them over the dangerous first and second years of life a great step will have been taken to control tuberculosis.

Perhaps the best time in all life to attack tuberculosis from the standpoint of preventing it is between the ages of two and twelve years. This is the time when health education is best accepted and longest retained. It is also the time when the human body best controls tubercle bacilli, by retaining them in the lymph nodes. Therefore, it is just before and during the school age of the child when physicians and nurses can do much to prevent tuberculosis in future generations. No physician can discharge his full duty until he manifests an active interest in school health work.

In the prevention of tuberculosis nothing at present is more important than the diagnosis of the disease. It is upon diagnosis that so many of the preventive measures and factors hinge, therefore, it behooves every physician to first become a good diagnostician if he is to contribute his full share to the prevention of tuberculosis.

On other preventive measures the physician must also be well informed for no one enjoys such confidence of the people and is so able to educate the public as he. He must not neglect the tremendous possibilities of the nurse in the prevention of tuberculosis. It is the nurse who can carry the message to the home, who can insist that the patient carry out the physician's orders and who can encourage and inspire confidence in the patients.

Too often in the past physicians have looked lightly upon preventive medicine. Some have felt that such work is beneath the dignity of the medical profession. The scene is changing, but probably many years will pass before preventive measures are practiced as extensively as they should be. To those who are skeptical I can present no more convincing evidence of the value of preventive measures than the demonstration already made by the National Tuberculosis Association under the direction of Dr. Donald B. Armstrong and the great decline in the tuberculosis death rate in parts of the world such as Sweden, England, Germany, and North America where preventive measures are already in practice to some extent. There is no reason to believe that results similar to those obtained at Framingham may not be repeated any place if conditions are made right. To do this kind of work successfully, however, requires the interest and unending support of local physicians just as the gradual stamping out of tuberculosis among all people requires the interest and unending support of all physicians. It is encouraging to be able to state that at no time in human history has there been so little sorrow and suffering and so few deaths for a given population as at the present time. This means that a great work has been accomplished by those laboring to prevent tuberculosis. Even yet, however, we must recall the fact that approximately one grave in every ten throughout the world is dug for a person dying of tuberculosis; therefore, the job is far from completed, and physicians everywhere must not only work unceasingly themselves but must enlist the support of all others capable of assisting them. In preventive work the physician and the nurse must bear in mind constantly that lay health workers are capable of aiding tremendously. The physician must never forget that he who heals disease does tremendous service but he who prevents disease does infinitely greater service.

[End of Series.]

## PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

Meeting of September 14, 1927

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, September 14, 1927, at 8 P. M. Dinner was served at 7 P. M. There were 29 members present.

In the absence of the President the meeting was called to order by Dr. H. L. Ulrich.

The minutes of the May meeting were read and approved.

The Secretary-Treasurer's reports for 1926-27 were read and approved.

A letter was read from the President, Dr. F. E. Burch, asking that the reading of his Presidential Address be postponed to the October meeting on account of his absence from the city.

The election of officers resulted in the following being elected for the ensuing year:

President.....Dr. John E. Hynes, Minneapolis  
Vice-President.....Dr. C. N. McCloud, St. Paul  
Secretary-Treas.....Dr. Carl B. Drake, re-elected

The scientific meeting of the evening was as follows:

Dr. E. M. Hammes, of St. Paul, reported a case of streptococcic meningitis associated with otitis media, with a radical operation. (The case was seen in consultation with Dr. A. W. Hilger.) During the course of the acute illness to the time of death there was no evidence of meningeal irritation, although the spinal fluid was of a markedly purulent character and contained many streptococci. (A detailed report of the case will be published.)

## DISCUSSION

DR. HAMMES: I would like to ask some of the ear men whether it is not unusual to have meningitis develop twenty-four hours after operation with the dura showing nothing at the time of operation?

Dr. Henry F. Helmholz (Rochester) read his thesis, entitled "Elective Localization of Colon Bacilli in the Kidney." Lantern slides were shown.

## DISCUSSION

DR. W. R. RAMSEY (St. Paul): We are all, not only us pediatricians, very much indebted to Dr. Helmholz for this very excellent work because it really, after a good many years of rather intensive work all over the world on this subject, has been able to show something positive. It is rather interesting to note that with all his work he has not been able to demonstrate by what route infants get pyelitis—whether by the blood route or by some other route. Some

years ago I was among the first, in this country at least, to report cases of pyelitis and I had been doing some work in Escherich's Clinic in Vienna where he had done a good deal of work on the colon bacillus as the cause of pyelitis. About twenty years ago Dr. Greene asked me to read a paper on obscure fevers in children, and when I returned home I read a paper on pyelitis because that explained most of the obscure fevers in children. A few years ago I found that severe symptoms could occur without pus being found in the urine, but usually I was able to find the colon bacillus in the urine for several days at a time. The fact, however, that there are certain strains of colon bacilli that tend to localize in the pelvis of the kidney and produce pyelitis, is a very distinct and original research for which we can thank Dr. Helmholz.

DR. H. L. ULRICH (Minneapolis): I would like to ask Dr. Helmholz if he noticed any relation to the amount of bacilli injected and the amount excreted?

DR. HELMHOLZ (closing): In answer to Dr. Ulrich's question, our previous work on the passage of bacilli through the kidney makes us believe that only after actual renal lesions have been produced do bacilli pass through the kidney. Of course, this problem is old and dates back to 1886, when Wysokowitz started the ball rolling. There has been a great deal of work, both pro and con. Our experiments seemed to indicate that the uninfected kidney did not allow bacilli to pass through. If a fresh animal was used for each experiment we practically never found that any bacilli passed through the renal filter in five hours. After seven hours virulent staphylococci regularly appeared in the urine and regularly produced abscesses in twenty-four hours. We repeatedly injected virulent streptococci, staphylococci, and colon bacilli into the blood stream, and at no time within twenty-four hours did they appear in the urine.

In regard to what Dr. Ramsey said about modes of infection, I feel that we have made one contribution. In studying bacilluria in the rabbit, of twenty-five animals two had definite pyelitis and had bacilli in the ureteral urine, and twenty-three had bacilluria in the bladder only, so that I feel that in the study of these infections we are dealing with an ascending infection in the urinary tract.

Dr. F. J. Hirschboeck, of Duluth, read his thesis, entitled "Massive Collapse of the Lung." Lantern slides were shown.

## DISCUSSION

DR. C. B. DRAKE (St. Paul): I think this is a very interesting subject and one to which it is well to have the attention of the surgeon, as well as medical men, called. It occurs much more frequently than we have thought. I know that since the condition has been called to my attention I have been on the lookout for it, and just during the past summer I have seen two cases. One followed an appendectomy which responded beautifully to this



maneuver of turning the patient on the uninvolved side and telling him to cough. The other case was that of an old woman, following a cholecystectomy some three weeks previously, where I was very suspicious of the condition, but it was not marked enough to be sure on physical examination. The maneuver of turning her onto the unsuspected side probably prevented her from developing a more extensive collapse. I was just wondering whether some of these pneumonias in elderly individuals are not collapse of the lung, or begin that way. I never thought of this condition as coming with pneumonia. Another patient (a physician) with pneumonia, whom I helped to take care of, coughed up a lot of material and, being a doctor, felt sure he had a lung abscess. An accompanying lung collapse would explain this occurrence. Of course it would be rather difficult to be sure of such a complication without the evidence of an x-ray examination.

Dr. H. F. HELMHOLZ (Rochester): I am very much interested in Dr. Hirschboeck's paper, and think

it might be of interest to report on a paper of Crozier Griffith, of Philadelphia, given before the American Pediatric Society, calling attention to the fact that not only in massive collapse of the lung but in pneumonia also was the heart occasionally drawn to the affected side. He presented a series of five cases of definite pneumonia in which the heart was drawn to the affected side.

Dr. HIRSCHBOECK (closing): It had not occurred to me that this condition occurred in older people. In older people the congestion is usually bilateral, and this condition is unilateral in most instances. I do not know what Dr. Griffith based his views on, but it is just possible that what he found may have been pneumonia atelectasis. It may be that Dr. Griffith's cases were of the pneumonic type, as described by Dr. Abt.

The meeting adjourned.

CARL B. DRAKE, M.D.

Secretary

## PHYSICIANS LICENSED AT THE OCTOBER (1927) EXAMINATION TO PRACTICE IN MINNESOTA

### BY EXAMINATION

Name	School and Date of Graduation	Address
Allan, Frank Nathaniel.....	Univ. of Toronto, M.B., 1922.....	Rochester, Minn.
Brabec, Paul Frank.....	Iowa State Univ., M.D., 1926.....	Perham, Minn.
Danzer, Jos. Theo.....	St. Louis U. Sch. of Med., M.D., 1927.....	Shriner's Hospital, Minneapolis
Foster, Wilmot Coyne.....	U. of Oregon, M.D., 1920.....	Rochester, Minn.
Groves, Morton Wm.....	Ind. Univ. Sch. of Med., M.D., 1926.....	2832 Blvd. Place, Indianapolis, Ind.
Hanson, Everett Carlyle.....	U. of Minn., M.B., 1927.....	Ancker, Hospital, St. Paul, Minn.
Holland, Wilbur Wallis.....	U. of Pa., M.D., 1925.....	Rochester, Minn.
Jennings, Frank LaMont.....	Syracuse U., M.D., 1913.....	Oak Terrace, Minn.
Linstrom, Everett H.....	U. of Minn., M.B., 1927.....	Swedish Hospital, Minn.
Macnic, John Percival.....	Harvard, M.D., 1925.....	2424 Lake Place, Minneapolis
Mayo, Chas. Wm.....	U. of Pa., M.D., 1926.....	Rochester, Minn.
McLeod, James Lawrence.....	U. of Manitoba, M.D., 1926.....	Bovey, Minn.
Norment, Wm. Blount.....	Jefferson, M.D., 1922.....	Rochester, Minn.
Partch, Wallace Taylor.....	Rush, M.D., 1926.....	Rochester, Minn.
Prout, Curtis Tuttle.....	Cornell, M.D., 1924.....	Rochester, Minn.
Rempel, Dietrich D.....	Imperial U. Jurjew, 1918.....	Butterfield, Minn.
Rohwer, Roland Theodore.....	Creighton, M.D., 1924.....	Rochester, Minn.

### BY RECIPROCITY

Bunten, Wm. Andrew.....	U. of Nebraska, M.D., 1922.....	Rochester, Minn.
Dawley, Walter A.....	U. of Ill., M.D., 1926.....	Rochester, Minn.
Evans, Edward Thompson.....	Harvard, M.D., 1922.....	2423 Irving Ave. S., Minneapolis
Heimdal, Clarence Oliver.....	Rush, M.D., 1926.....	Rochester, Minn.
Parson, Geo. Washington.....	Med. Col. of Va., M.D., 1922.....	Rochester, Minn.
Ruby, Fred McKemy.....	U. of Mich., M.D., 1905.....	Hibbing, Minn.
Scholl, Marguerite Julia.....	(U. of So. Cal., M.D., 1921).....	Rochester, Minn.
	(U. of Minn., M.D., 1927)	
Troup, Ralph Leslie.....	U. of Nebr., M.D., 1921.....	Rochester, Minn.

### RECIPROCITY NATIONAL BOARD

Fowler, Louis McCargo.....	U. of Pa., M.D., 1924.....	Rochester, Minn.
Mahorner, Howard Raymond.....	U. of Pa., M.D., 1925.....	Rochester, Minn.
Priestley, Joseph Biddle.....	U. of Pa., M.D., 1925.....	Rochester, Minn.
Sussex, Lloyd Thomas.....	Northwestern, M.D., 1926.....	Rochester, Minn.

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## ANNOUNCEMENT AND GREETINGS

With this issue of THE JOURNAL-LANCET Dr. W. A. Jones, its editor, closes his *twenty-seventh* year of service in that capacity, and Mr. W. L. Klein, the publisher, closes his *fortieth* year of service as publisher.

They both send their greetings and their cordial thanks to the readers, the contributors, and the advertisers who have made possible such a publication in the Twin Cities for *fifty-eight* years.

## TRIALS AND TRIBULATIONS

The doctor, the surgeon, and the dentist are constantly wondering what is going to happen to them, but the average man in these three lines of professional work is a pretty good sport, and he sticks to his business with intelligence and faithfulness. He has learned, or will learn when he grows older, not to expect much applause from people or the profession.

In the first place, it seems to the writer the doctor is considered the legitimate prey of many organizations. He is a good deal like the retail merchant who replied to the wholesaler in answer to a dun by informing his wholesaler that his present shattered condition and his bank account made it impossible for him to send a check in response to the request for funds for

the "Aged and Decrepit Army of Angleworms." That he had been subjected to the effects of federal laws, state laws, county laws, corporation laws, by-laws, brother-in-laws, sister-in-laws, mother-in-laws, and outlaws that had been foisted upon an unsuspecting public and through them had been held down, held up, walked on, sat on, sand-bagged, flattened, and squeezed until he did not know where he was or what he was or who he was or why he was! These laws compelled him to pay merchant tax, capital-stock tax, excess-profit tax, income tax, real estate tax, property tax, state auto tax, city auto tax, gas tax, water tax, light tax, amusement tax, cigar tax, cigarette tax, street tax, real tax, school tax, surtax, syn-tax, and carpet tacks. In addition to paying these taxes he was requested and required to contribute to every society and organization that the inventive mind of man can organize: To the Society of St. John, the Baptist, the Women's Relief, the Navy League, the Children's Home Fund, the Policemen's Benefit, the Dorcas Society, the Y. M. C. A., the Y. W. C. A., the Boy Scouts, the Jewish Relief, the Belgian Relief, the Near East Relief, and the Gold-Diggers Home; also every hospital, every charitable institution in town,—the Red Cross, the Black Cross, the White Cross, the Purple Cross and the Double Cross. The Government had so governed the business that he did not know who owned it. He was suspected, expected, inspected, disrespected, examined, re-examined, informed, required, commanded, and compelled until all he knew was that he was supposed to provide an inexhaustible supply of money for every known need, desire, or hope of the human race and because he refused to donate all he had and go out and beg, borrow, and steal money to give away he was cursed, discussed, boycotted, talked to, lied about, talked about, help up, held down, and robbed until he was nearly ruined. So the only reason he was clinging to life was to see what in h— is coming next.

Most of these paragraphs are inspired or almost wholly copied from the *Sylvania* (Georgia) *Telephone*. They represent pretty well the state of mind that the average medical associate is in, although he does not dare express himself to this degree. Of course the whole thing is founded on an old story that was told on an old doctor who had practiced medicine (probably dentistry, too, for he lived in a country town) until he was sucked dry and yet, because he was a good fellow, he was going to continue the practice of medicine to see what would happen in the next fifteen minutes.



## THE PUBLIC RELATIONS CONFERENCE

A bulletin has been issued by the committee of the Minnesota State Medical Association under Dr. George Earl's chairmanship. The conference named in the headline took place on the tenth of December, at the Nicollet Hotel. This committee is endeavoring to educate the public, and the Minnesota State Medical Association is behind it. The bulletin says, in an explanatory note, that education is the only solution for the problem of public health, and the three professional groups are chief members or are chiefly responsible. The medical profession, who are usually trained and natural leaders, is the first profession. Sanitary engineers, upon whose shoulders rest such problems as water supply, sewage disposal, and drainage, comprise the second group. And a group such as teachers, nurses, technicians, and lay workers who are presumably humanitarians, are the third group. With these three professions working together the public ought to be informed, but there is some reason to believe that the public is very difficult to inform or to educate. The process has gone on for centuries and, of course, much has been accomplished, but there is still much to do. The keynote of philosophy is ethics, but a new word has been substituted for ethics and its real meaning is *service*.

Now it is presumed by health authorities that Minnesota ranks among the first on the question of health because of the application of preventive medicine. It is also presumed that surgical efficiency has nowhere reached a higher standard than in this state. That is a question which may be discussed, but for the benefit of the community it ought not to be disputed. It is quite certain that typhoid fever, which was one of the common and often fatal diseases of twenty years ago, is now extremely rare and is usually brought into the state from other places. Tuberculosis, formerly regarded as fatal in all cases, is now considered curable. The infant mortality rate is lowest in this state. That may seem like a broad assertion, but it is a true one. Diphtheria has been handled much more intelligently, too, than in the past, and the deaths from it, owing to the administration of antitoxin, are infrequent. It is also presumed that in the question of education for the public, in order that the health rate may be improved, there should be individual observation and co-operation of those who are interested in the elimination of disease, taking an active interest in the patient's physical welfare, having periodic examinations,

and insisting upon pure water and milk supplies in every community; securing and obeying the warnings of qualified health officers; protection during the process of contagious diseases; obeying your family physician (this means a real doctor); taking an interest in the lay health organization of your community; and wherever possible having infants and children under regular medical supervision.

In 1910, in Minnesota, of every 1,000 children born, 92 died before they were one year old. At the present time this has been reduced to 61, an improvement of almost 34 per cent. Then, too, it is estimated that the length of the average human life has now been increased from 47 years to 58 years. All this has come about by the continued and organized efforts of state and municipality with an enlightened public understanding. It is not such an expensive proposition after all, and the saving of life and the protection of health mean money in the pocket of the individual. It is quite likely that some of this improvement in the longevity of the individual is due to the better understanding and better education of the doctor, not altogether to the examinations and protection afforded by doctors who are young and inspired, but to how much they understand of the art of medicine—quite an important point, and it goes hand in hand with medical education. All of us who know medical men realize that they have an intuitive way of seeing people, estimating their mental attitudes, and picking up some apparently trivial point upon which they base a prognosis and very frequently a diagnosis. It seems almost uncanny sometimes, but it is true among men who have practiced medicine for a long time. It would seem that the medical profession, the engineering profession, and the public have laws enough to keep their efficiency at a high point, if they will do it and if the public will assist them.

Minnesota has always been a leading factor in medicine and in the enactment of laws for the benefit of its inhabitants. This service will undoubtedly continue, and in the hands of leading men who are conducting public health education it certainly will go on progressively improving.

Many other things were discussed at the conference. The question of the Minnesota State Medical Association and as to whether the doctor is a member of the Minnesota State Medical Association were considered. Of course, we have a number of doctors in the state and the membership of the State Medical Association is approximately 2,000. Consequently, in most districts the sick are well looked after. They are

not only guarded by the local practitioner, but they are guarded by the educational and public health service which may be called upon at any time from headquarters in this state, and usually the headquarters are in the State Medical Association bureau. It is expected that the doctor who is a member of the State Medical Association will display his membership certificate showing that he is a member in good standing. It takes a little time, often, to promote these new ideas and put them before the public. At the present time the Minnesota State Medical Association represents no special school of medicine. It simply requires the doctor to pledge himself to give his services as best he can when the occasion arises. In the meantime, if he is located far from the centers, far from the University, he has the opportunity of submitting his data to someone in the Health laboratory. Perhaps the Public Health Education Committee and the Minnesota State Medical Association require a good deal and expect a good deal, not only in the preparation for the practice of medicine, but in preliminary educational measures. Then, too, the Minnesota State Medical Association expects to advise welfare organizations and to participate in their activities by the holding of public meetings, but it must be careful of one point—it must not interfere with health organizations that are under proper leadership. Already there has been some discussion between some of the larger health groups in large cities and in the Minnesota State Medical committee's work.

One of the Primer questions asked in the bulletin is, "Do doctors recognize the power of mind over body?" And here the writer is inclined to branch out a little bit and say something for people who are subjects of nervous or mental disorders. Can they be handled equally well in rural communities or by men who have never experienced an understanding of the relationship between the mind and the body; will they know how to begin to examine a patient of this type? and do they know how to practice the art of medicine under such circumstances, understanding the nervous equation? Does the surgeon consider the nervous system as often as he should before he operates on a patient? He would rather be inclined to tell his patient that the cause of his trouble is a physical one, and those who have seen numbers of people operated on when they were nervous subjects will appreciate the ideas of a conservative man in surgery, just as we appreciate, now, what industrial medicine has done for a large number

of individuals. The accident disability in the mines of northern Minnesota has been greatly reduced, saving an enormous amount of time which would have been lost except for the industrial surgeon or physician. There is no doubt that the doctors know that a great advance has been made in medicine, whether it be industrial or in other medical problems, or whether they have discovered newer methods of treatment to relieve suffering and long-continued illness or not. But have the public appreciated it?

## NEWS ITEMS

Dr. C. J. Rollefson has moved from Ambrose, N. D., to Souris, N. D.

Dr. W. G. Vandesteeg has moved from Biwabik, Minn., to Rockford, Ill.

The Maternity Hospital of Minneapolis celebrated its 41st anniversary last month.

The women of Bemidji have organized a Hospital Auxiliary to aid the hospital of that city as only women can aid.

Dr. J. K. Holloway, of the Mayo Clinic, Rochester, has located in Seattle, Wash., for the practice of surgery.

Dr. Roland S. Scherer, who has been practicing a short time at Winthrop, has become associated with Dr. E. J. Simons, of Swanville.

At the December meeting of the Huron Medical Society of South Dakota, papers were presented by Drs. O. R. Wright and H. L. Saylor, both of Huron.

The American Legion veterans of North Dakota are very active in a movement to have a hospital for veterans of the World War established in Fargo.

The Swedish Hospital of Minneapolis has decided to enlarge its present facilities. Work will begin in the spring on an additional building to cost \$500,000.

Dr. E. Libman, of New York, gave the annual address, on November 22, before the Minnesota Pathological Society. His subject was "Observations on Endocarditis."

Dr. W. L. Matlock has moved from Elk Point, S. D., to Huron, S. D. Dr. F. B. Ricketts, formerly of Georgetown, Ind., will take over Dr. Matlock's practice at Elk Point.

The course in Medical Technology of the University of Minnesota will be closely followed by



a like course to be established by Creighton School of Medicine, of Omaha, Neb.

Fairview and Thomas Hospitals, of Minneapolis, have lost by death the president of their Board of Directors, Mr. Julius C. Hallum, a useful citizen and a noble man.

Dr. G. L. Jacquot, of Tyler, will take up practice in Marshall on the first of the year. Dr. Jacquot is a graduate of the Minnesota College of Physicians and Surgeons, class of '08.

Dr. Irene Smedley, formerly a practicing physician in Sioux Falls, S. D., before she went as a medical missionary to India, in 1921, died last month in Chicago, at the age of 66.

A group of women, members of the Women's Club of St. Paul, have agreed to raise \$20,000 for the equipment of the Children's Hospital now in course of construction in that city.

Drs. W. G. Workman and A. D. Hoidale, of Tracy, have purchased one of the largest residence buildings in that city for use as a hospital until a new hospital building can be erected.

Dr. F. W. Schlutz, Chief of the Department of Pediatrics of the University of Minnesota, has gone to Havana, Cuba, as a delegate to the Pan American Child Hygienic Conference, where he will present a paper.

Dr. Joseph Sorkness, of the Stutsman County Clinic, Jamestown, N. D., recently spoke before the Rotary Club of that city on the American Medical Association. Such educational talks before public bodies are worth while.

The Sebeka Hospital, of Sebeka, of which Dr. O. V. Johnson was the medical director and superintendent, was wholly destroyed by fire ten days ago. It was a well-equipped hospital of 10-bed capacity. It will not be rebuilt until Spring.

The work of the Children's Hospital of St. Paul will cover a field not covered by any other children's hospital in this county, especially in its course covering research work. It will have the hearty co-operation of the Medical Graduate School of the University of Minnesota and of the Mayo Clinic.

Dr. L. J. Evans, former director of the Child Health Demonstration at Fargo, N. D., now assistant director of the Child Health Demonstration for the Commonwealth Fund of New York City, spent several days in Fargo recently to gather data for his report in which all physicians will be deeply interested.

Drs. W. H. Goeckerman, H. G. Irvine, Paul O'Leary, and H. E. Michelson, members of the Minnesota Dermatological Society, attended the meeting of the Mississippi Valley Dermatological Association held in St. Louis on November 19. The 1928 meeting of the Association will be held in Minneapolis and Rochester.

The Ramsey County Medical Society elected the following officers for 1928, at its annual meeting last month: President, Dr. E. M. Jones; vice-president, Dr. Wallace Cole; secretary, Dr. A. C. Schulze. All the officers of this large society are residents of St. Paul and all are graduates of the Medical School of the University of Minnesota.

Of the thirty physicians licensed at the October examinations to practice medicine in Minnesota, four had passed the National Board examination, eight were licensed by reciprocity with other states, and seventeen had passed the Minnesota Board examinations. There were graduates of twenty different medical schools in the list of those admitted to practice.

The Regents of the University of Minnesota have given up hope of obtaining the donation of \$1,250,000 from the Rockefeller Foundation for the establishment of a great medical center at the University. The Board of Regents and the Council of the City of Minneapolis have been unable to agree on a plan to have the City (General) Hospital moved to the University Campus.

#### The Stutsman County Medical Society of North Dakota

The last meeting of the Stutsman County Medical Society was held on November 28, at 6:30 P. M., at Trinity Hospital, Jamestown, N. D.

A dinner was served by the hospital. The subject of the meeting was the various phases of malpractice. Drs. N. O. Ramstad, of Bismarck, E. A. Pray, of Valley City, and J. Crawford, of New Rockford, and Attorney Geo. Thorp, of Fargo, addressed the Society on the subject.

The following members were present: Drs. W. C. Nolte, D. W. Johnson; G. H. Holt, F. Peake, Joseph Sorkness, W. R. Winn, W. A. Gerrish, A. W. Guest, H. K. Wink, F. O. Woodward, P. G. Arzt, T. L. DePuy, and H. M. Berg, of Jamestown; Dr. S. W. Melzer, of Woodworth; Dr. G. D. Todd, of Medina; Dr. C. P. Buzzell, of Cleveland.

The following visitors were present: Drs. Ban Houten, C. E. Spicer, Emmanuel Crosby, E. A. Pray, F. L. Wicks, W. H. Moore, and S. A. Zimmerman, of Valley City; Drs. McLaughland and Crawford, of New Rockford; Drs. Carr and Thorp Carr from the State Hospital, Dr. N. O. Ramstad, of Bismarck, Dr. Simmons, of Medina, and Attorney Geo. Thorp, of Fargo.

The Society feels highly complimented at having so many guests at our meeting. If any of the doctors in this territory would be interested in attending any of our meetings the secretary will be glad to send them announcements of each meeting.

The following officers were elected: Dr. Woodward, of Jamestown, President, re-elected; Dr. Melzer, of Woodworth, vice-president; Dr. Berg, of Jamestown, secretary and treasurer; censor, Dr. Wood, of Jamestown. The delegate, Dr. W. C. Nolte, of Jamestown; delegate-alternate, Dr. D. W. Johnson, of Jamestown, and the rest of the members on the Board of Censors, Dr. C. P. Buzzell, of Cleveland, and T. L. DePuy, of Jamestown, are still in office.

H. M. BERG, M.D.  
Secretary and Treasurer.

### The Aberdeen District Medical Society of South Dakota

The November meeting of the Aberdeen District Medical Society was held at the Aberdeen Chamber of Commerce, on Tuesday evening, November 29, 1927. The meeting was called to order by the President, Dr. W. A. Bates. About 45 members and guests were in attendance.

The following program was presented:

1. "General Medicine and the Ophthalmologist."  
Dr. J. B. Gregg, Sioux Falls, S. D.
2. "Some Aspects of Infant-Feeding."  
Dr. E. D. Anderson, Minneapolis, Minn.
3. "Cancer of the Rectum."  
Dr. W. A. Fansler, Minneapolis, Minn.
4. "The Education of the Medical Man."  
Dr. S. M. Hohf, Yankton, S. D., President of S. D. State Medical Association.
5. "Remarks on State Association Matters."  
Dr. J. F. D. Cook, Langford, S. D., Secretary of S. D. State Medical Association.

After a general discussion on Federal Narcotic and Liquor Laws a committee was appointed to draft resolutions on these subjects and forward them to our Representatives and Senators in Congress.

The following were elected to membership: Drs. A. V. Rock and A. J. Larson, Mobridge; Dr. C. L. Farabaugh, Herreid; and Dr. L. C. Shockey, Pollock.

R. G. MAYER, M.D.  
Secretary-Treasurer,  
Aberdeen District Medical Society.

### Office Position

A graduate nurse desires to return to office work. Is a competent stenographer. Address 422, care of this office.

### Substitute Work Wanted

By an experienced physician graduate of a high-grade medical school and licensed in Minnesota. Address 433, care of this office.

### Association Wanted

Association wanted with group or individual. Capable of general and urological surgery. Training in eastern hospitals, teaching and practice. Address 431, care of this office.

### Position as Technician Wanted

Can fill a responsible position as laboratory and x-ray technician. Have had good training and experience under competent medical school heads. Address 423, care of this office.

### Wanted—An Internist

To become associated with a group of physicians in Minneapolis. Medical cases referred. Complete equipment for doing first-class diagnostic work, including X-Ray. Address 428, care of this office.

### Physician's Office Equipment for Sale

The office equipment of the late Dr. E. M. Clay, of Hutchinson, Minn., including therapeutic lamp, violet ray machine, optical case, and office supplies, is offered for sale. Also a good opening for a physician. Address Mrs. E. M. Clay, Hutchinson, Minn.

### Practice for Sale

Sixty miles from Minneapolis, in a prosperous town and surrounding country. Took in \$7,000 in cash in past fourteen months. Easy competition. Rent cheap. Will sell for \$300 for equipment, etc. Leaving soon for special work. Address 426, care of this office.

### Apparatus for Sale

Complete X-ray equipment, including Acme-International 6-60 generator, standard radio and fluoroscopic tilt table, standard stereoscope, two Coolidge tubes, latest type Bucky diaphragm, and other accessories, all in first-class condition. Price very reasonable for quick sale. Address 429, care of this office.

### Physician Wanted

Graduate of Class A Medical College and with good surgical internship to assist in general industrial practice of medicine on the Iron Range, Minnesota. Initial salary \$200 to \$300 per month. Tell everything employer should know about you in first letter. Photo and references. Address 425, care of this office.

### Eye, Ear, Nose and Throat Assistant or Associate Wanted

Competent eye, ear, nose and throat man as assistant to established specialist, eastern South Dakota. Reasonable salary to start, partnership offer later. Full information on receipt of details as to age, nationality, family, health, training, experience, and salary expected first year. Address 427, care of this office.

### Apparatus for Sale

All in perfect condition, good as new. One Hanovia Alpine Lamp; one Castle Electric Sterilizer (choice of small instrument sterilizer); one Brown-Buerger catheterizing and operating cystoscope with concave and convex sheaths (Wappler make) with current controller and irrigating stand; one instrument and dressing stand, glass and white enamel. Address 432, care of this office.



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## PUBLISHER'S DEPARTMENT

### PERTUSSIS GLYCEROL VACCINE

Pertussis Glycerol Vaccine (Lederle) offers a valuable preventive and therapeutic agent in whooping cough. Whooping cough causes more than 10,000 deaths each year in the United States.

Any method that can be employed which will reduce this enormous wastage should be welcomed by physicians. In providing such a vaccine you have at the time of its application the equivalent of a fresh pertussis vaccine. This has been found to be absolutely essential in dealing with cases of Pertussis or Whooping Cough.

Further information can be secured by applying to the Lederle Antitoxin Laboratories, 633 Andrus Bldg., Minneapolis, Minn.

### RYTHMIN

The layman seldom thinks of constipation or indigestion as more than inconvenience to be temporarily overcome. The physician looks to the cause behind the symptom and seeks to bring about a permanent and satisfactory adjustment.

Among the endocrine substances which have been demonstrated to have a curative action is Rythmin (G. W. Carrick Co., 421 Canal Street, New York City). To the bile salts, duodenal and pyloric mucosa, and spleen has been added 1-2 grain of phenolphthalein for a more rapid cathartic effect. In this way Rythmin satisfies both the patient in his desire for immediate results and the physician who looks to a re-established basic physical condition.

### SURGICAL INSTRUMENTS AND SUPPLIES

Messrs. C. Bagstad & Co., of 89 South Ninth St., Minneapolis, believe they can supply anything in the line of surgical instruments, office equipment and supplies needed for the hospital, the surgeon, or the physician, and can supply them in unexcelled quality and at the lowest possible prices.

They invite calls from medical men, or they will be glad to receive letters of inquiry concerning anything medical men want.

They guarantee perfect satisfaction to every customer.

In writing, address C. Bagstad & Co., 89 South Ninth St., Minneapolis.

### PITUITARY EXTRACTS

Competition may be the life of trade, but it develops some bizarre contrasts. There is competition in the manufacture of pituitary extracts, and the consequence is that the size of the required dose has been, so to speak, "in the air," one brand being several times as active as another. This situation has at last been remedied by the adoption of an official standard (U.S.P. X), but questions of purity and stability remain to be solved by the manufacturers.

In passing, we may remark that the standard adopted by the U.S.P., and seconded by the Geneva conference of the League of Nations, is the same as that which has long been applied by the house of Parke, Davis & Co., whose product Pituitrin is so well known.

For further particulars in regard to Pituitrin the reader is referred to the advertisement in this issue entitled "Are All Pituitary Extracts Alike?"

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## THE MONROVIA CLINIC

This Clinic is composed of five well-known specialists who have had a large experience in the diagnosis and treatment of throat and lung diseases, and have now located in Monrovia, Calif., in a climate that is unexcelled for such an institution and such work.

Their laboratories, lamps, etc., are such as the modern science of medicine has found helpful in their work; and their housing facilities for their patients are admirable, for patients may be cared for in the Monrovia Sanatorium, the Kalkfirschner cottages, in nursing homes, or with their families in private bungalows.

Monrovia is accessible to all points in California, and is an ideal place for persons taking treatment for throat and lung diseases.

## THE NEWEST THING UNDER THE SUN

Reed & Carnrick, pioneers in pluriglandular therapy, put out a product only at long intervals, but when they do present the profession with a new product it is one to bank upon.

In 1906 they presented Nephritin to physicians, and it has proved to be without an equal in renal conditions.

To-day they are offering Ovacoids for dysfunction of the female sex glands, and testacoids for hypofunction of the male sex glands. The former contain the hormones of the entire ovary and the anterior pituitary and are utilizable in all the various disorders of the female sex glands. Testacoids contain the hormones of the testicle, associated with the active principles of the prostate in highly concentrated form, and they are utilizable in impotence, sexual neurasthenia, senility, and other conditions of that nature.

Reed & Carnrick are sending to all the English-speaking physicians in the world one of the handsomest books which has ever been produced by a pharmaceutical house. It is entitled "Bringing the Sex Hormones to the Medical Profession," and contains 32 pages which are replete with enlightening text and unusually valuable illustrations.

Stock packages of Ovacoids and Testacoids will be sent to all physicians who will write to Reed Carnrick, 155 Van Wagenen Ave., Jersey City, N. J.

## THE NEW ASBURY HOSPITAL OF MINNEAPOLIS

When the Government rented the Asbury Hospital of Minneapolis for use as the U. S. Veterans Hospital No. 68, the church organizations and the active men and women long engaged in conducting that splendid hospital, immediately erected a handsome new building on their property near the former building. This new building has a capacity of 170 beds, and has been erected and equipped with a ripe experience gained in years of service in the former hospital.

The name of the active staff of the new Asbury Hospital appears in the Hospital's card on another page; and in this list of over fifty physicians will be found many of the best known general practitioners and specialists in the city of Minneapolis. Such men, working in a hospital with an unsurpassed equipment and wish such departments as modern laboratories and nurses training school, cannot fail to give the patients in the hospital all possible hope for the saving of their lives and the restoration of their health.

By the spirit of the Hospital's management as experienced in its slogan of *unselfish, impartial impersonal* service to all, this Hospital is doing a really great work. Its superintendent is Mrs. Sarah H. Knight.



## An Ideal Hotel for Your Convalescents

Especially helpful to Gastro-Intestinal, Nephritic and Bladder cases. Cheerful as well as correct in appointments; accommodates 800 guests. Table supplied with delicacies from own Dairy and Farm. Dietary.

Your tired patients needing a change will find improvement here.

**FRENCH LICK SPRINGS HOTEL COMPANY, French Lick, Indiana**



## ARTHUR W. ISCA—THE BOOK MAN

Arthur W. Isca, who deals exclusively in medical and nursing books, reports a handsome increase in his business of 1926 over 1925. This increase is due to the splendid service he gives the medical men and nurses of the Northwest.

As one capable of rendering such a service and glad to render it freely, even enthusiastically, Mr. Isca has made a host of friends; and, of course, he wants to make many more.

If our readers want any information about medical and nursing books, Mr. Isca invites them to write him. His address is 210 South 7th Street (Elks' Building), Minneapolis.

## POSTGRADUATE COURSES

The Post Graduate Hospital and Medical School of Chicago (2400 South Dearborn St.) offers at all times a variety of courses in all branches of medicine and surgery, and frequently special courses are offered which are very attractive. Many medical men of the Northwest have taken special courses at this school, and the results are uniformly gratifying.

We venture to say that no physician who has not taken a course of intensive work, say for a couple or more months, can understand how helpful a course of this kind is.

Such a course produces gratifying direct results, and it fits a man for other work that brings him great reward.

We suggest that correspondence with this School will be profitable to the general practitioner, as well as to the specialist, and that a course in almost any branch will pay about the biggest dividend one has received since his graduation from medical school.

## BANK, SAVE, AND INVEST BY MAIL

The Minnesota Loan & Trust Co., of 405 Marquette Ave., Minneapolis, is doing an educational service of large value by teaching professional men and their families how to "save, bank, invest 'by mail"; and this Company is a wholly trustworthy organization of 44 years' successful business experience. They cordially invite medical men and their families "to make use of their facilities" in this line, concerning which they invite inquiries by mail or in person.

## RIVER PINES SANATORIUM

Drs. J. W. and H. M. Coon as Medical Directors of the River Pines Sanatorium for tuberculous have done a notable work in two directions, namely, in demonstrating that the climate, summer or winter, of Wisconsin and Minnesota is unexcelled for the treatment of the tuberculous, especially for those who have lived a few years in these states; secondly, they have done much to show the value of sanatorium treatment. The habits formed under the guidance of such a sanatorium not infrequently extend the lives of the tuberculous much beyond their natural terms of expectancy when in good health.

All general physicians should become acquainted with the work done at such institutions as the River Pines Sanatorium, and thus be prepared to send their patients to them and especially to advise them to remain under institutional treatment long enough to reap the full benefits of the rest and treatment and of the education gained in a well-conducted institution of this kind.

The hope of eliminating tuberculosis altogether is largely based upon the curative work of sanatorium care and education, and the River Pines Sanatorium at Stevens Point, Wis., is doing its share of the task.

# Convalescence

In the return to health after illness, the body needs most of all the stimulation of cellular function and the upbuilding of tissue.

## ESKAY'S NEURO PHOSPHATES

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is especially valuable in convalescence. It supplies calcium and phosphorus and through its strychnine, stimulates the nutrition of all organs.

It acts also as a stomachic bitter, increasing the appetite and improving digestion.

## TWO IMPORTANT FACTORS IN THE CONTROL OF DIABETES

It is worthy of more than passing note by the general practitioner that, despite the introduction of Insulin, the incidence of diabetes has steadily increased throughout the country. Reports from Eli Lilly and Company, who were the first to introduce this product commercially in the United States, indicate that, while the sale has increased steadily, very reliable insurance company reports and the reports from other sources of authority clearly indicate that only a small proportion of the total number of cases of diabetes that should be having Insulin are being treated.

That many diabetic patients do not present themselves to a physician until the disease is far advanced is, of course, well known. Reports on diabetic deaths reveal that a large proportion began treatment only a day before death, and but few had had Insulin more than thirty days before demise.

Frequently the first indication the physician sees is through a wound in which gangrene quickly appears. When patients need Insulin they should receive it. The physician is in no small measure responsible for the failure of Insulin to lower the incidence of diabetes when the opportunity to determine the fact is, for any reason, neglected.

The technic of Insulin administration is no longer the work of the specialist alone. To the busy man who does not feel that he has the time to treat diabetes, his first thought should be to send the patient

to another physician or to a hospital where he will receive proper and immediate attention.

When patients present themselves for examination the physician should look closely into the history of the patient. When obesity, loss of weight, fatigue, thirst, increased appetite, polyuria, fluctuation in acuity of vision, pruritus, neuritis, gangrene, ulcers or skin infections are present, it would be well to make a simple urine test. In diabetes mellitus the specific gravity is usually 1.010 or more, and sugar is present.

Much information of a very helpful nature is available to physicians on this subject. Great advances have been made in our knowledge of diabetes and its treatment, and there is available much informative literature on this subject. It is suggested that our readers request diet charts, weights scales, and other information of Eli Lilly and Company, Indianapolis, who will be pleased to supply.

### "THE SPA"

The Spa, of Waukesha, Wis., is doing a work in the treatment of diabetes, nephritis, and high blood pressure that cannot be excelled by the famous spas of Europe, to which many Americans resort.

Rest and diet and baths have produced results at "The Spa" which are often almost unbelievable, and yet their results may be almost entirely due to the rest and the change of scene and conditions.

Business men are learning that even a decade or more of years can be purchased at a trifling cost when these added years are sought at the right time. Just ask "The Spa," Waukesha, Wis., about it.

## PAUTAUBERGE'S SOLUTION

Coughs, colds and bronchial affections yield to treatment with creosote and lime. Pautauberge's Solution, a tablespoonful in half glass of sweetened water 3 or 4 times daily, immediately before or after meals.

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## COMPOUND SYRUP OF HYPOPHOSPHITES "FELLOWS"

The history of Fellows' Compound Syrup of Hypophosphites covers a period of over 50 years, and not a few physicians are living who have prescribed this tonic almost daily for that period of time, and its use to-day is perhaps larger than at any time in the past half century.

A tonic that thus holds its popularity in the medical profession must have unusual merit, and that it has such merit is evidenced by the large amount of substitution done by druggists who have become accustomed to this kind of work in filling prescriptions.

### FAIRVIEW HOSPITAL

Fairview Hospital of Minneapolis is owned and managed by the United Church Hospital Association as a means of doing a service to the people at large. The Hospital is located on a beautiful site between 23d and 24th Avenues South on the Mississippi River bank. It has a modern, fire-proof building with a capacity of 175 beds, with an equipment thoroughly complete, including the various forms of laboratory service, a nurses' training school, etc.

A hospital of this kind, that is, one conducted by a church organization, avoids competition with other hospitals in the matter of price, but not in the matter of service. It does its full share of the charity work that is the lot of all hospitals; but its chief aim is to serve the public in a way that lightens the misfortunes of all who have the extra heavy burdens entailed by sickness.

Every inquiry sent to the Fairview Hospital concerning its work will receive a courteous and prompt reply from the superintendent, Mr. Jos. G. Norby.

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(Aphrodisiac for Men)

Results are often permanent  
and generally satisfactory as indicated  
by clinical endorsement

These tablets are prepared  
to correct the underlying  
causes of sexual  
impotence.

### Each tablet contains:

Yohimbine Hydrochloride	1/12 gr.
Ext. Nux Vomica	3/8 gr.
Sod. Nuclienate	1 gr.
Orchic Substance	1 gr.
Pituitary Substance	3/4 gr.
Thyroid Substance	1/6 gr.
Suprarenal Substance	3/4 gr.

In bottles of 100 tablets—  
Price per bottle \$3.00.

Yohimbine as an aphrodisiac acts upon the genital organs, controls the nervous system and increases semen.

Nux Vomica besides acting as a nerve tonic overcomes depression from yohimbine.

Sodium Nuclienate is valuable in neurasthenia often associated with impotence.

Glandular Constituents correct conditions due to glandular deficiencies.

**ENDO PRODUCTS COMPANY**

**241 Fourth Avenue, New York**

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*For further information address*

**POST GRADUATE HOSPITAL AND MEDICAL SCHOOL, 2400 S. Dearborn St., Chicago, Ill.**

## CUTTING OUT THE DEAD WOOD

Some laymen cannot understand why medicine is casting aside cherished theories every year and adopting methods which are based on new principles. It was not so many years ago that there were still persons who stoutly declared that the earth was round. For centuries, the learned world held to the belief that a fish in water could not weigh anything. It was only when some daring soul insisted on putting a pail of water on the scales, balancing it, and then putting a lively trout into it and weighing fish and pail of water, that the time-honored theory of the weightless fish was abandoned—but years of argument followed before it gave up the ghost.

There is nothing harder to get rid of in this world than precedent and tradition. To this day it would be impossible to persuade any tailor not to put buttons on the sleeve of a man's coat. Centuries ago, such buttons were put there to prevent soldiers from making an unconventional use of their coat sleeves as handkerchiefs. They are certainly not ornamental—but custom decrees we must have them.

For a decade after coaches for railways came into use they always had a socket for whips in the front, although the iron horse did not need the lash. This is only one example of the firm grip of custom in every branch of business and trade.

As a matter of fact, the medical profession has ridden itself of more useless precedents and ideas than has any calling. It was long a sticker, for instance, in following the practice of blood letting. The most distinguished physicians wrote long treatises on phlebotomy and even prescribed the

times of the month in which it should be practiced. When, however, investigation demonstrated that blood letting was not based on sound physiological principles, the doctors discarded it. They were soon turned away from a custom which had the traditions of thousands of years behind it. Within a few years the majority of the profession had adopted means of relieving congestion, which did not entail the loss of a single drop of the fluid which is the life. Then the mineral poultice, Antiphlogistine, as soon as its merits were known, took the place of the unsightly and often uncleanly messes of organic substances.

Taken all in all, the medical profession leads the world in its readiness to throw useless theories and established practices into the limbo of forgotten things.

## PAUTAUBERGE'S SOLUTION

This season of the year is usually the time of increased need for remedies for coughs, colds, and bronchial affections. While the profession has a considerable number of products to choose from, the choice of many physicians is Pautauberge's Solution.

Pautauberge's Solution is a well-balanced mixture of creosote and lime and exhibits none of the bad effects of creosote so often evidenced in preparations of this kind. The lime contained in the solution is for the definite purpose of re-establishing the lime balance of the body. All in all, it is a rational remedy.

Pautauberge's Solution is distributed by George J. Wallau, Inc., 6 Cliff Street, New York, N. Y., who offer literature and samples to the profession.

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ERGOAPIOL (Smith) is supplied only in packages containing twenty capsules.

**DOSE:** One to two capsules three or four times a day. x x x

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**MARTIN H. SMITH COMPANY, New York, N.Y., U.S.A.**



## PUBLISHER'S DEPARTMENT

### HEMODAL

The Maltbie Chemical Company, whose announcement appears on the first cover page of this issue, desire to call the attention of readers of THE JOURNAL-LANCET to their hemorrhoidal unguentum, which they call Hemodal, an effective name for a product that has an excellent formula which is printed in their announcement, and is guaranteed as to its careful composition and preparation by a wholly reliable house, the "Makers of Calcreose and Other Fine Formulas for Physicians."

Hemodal is not recommended as a cure for hemorrhoids, but as an alleviation which is sought in certain conditions; that is, when the inconvenience and pain are intense, perhaps unendurable.

Hemodal is clean, convenient, and quickly effective; and these are qualities that are pleasing to one who has hemorrhoids.

### THE MARQUETTE PHARMACY

The Marquette Pharmacy, which is located in the La Salle Building, Marquette Avenue and Seventh Street, Minneapolis, is conducted by a group of highly trained pharmacists who specialize in work for physicians. Their methods of handling prescriptions have practically eliminated errors, and their honorable standing as professional men is a perfect guarantee that the quality of every drug that goes into a prescription put up by them is of the highest.

They carry a complete line of biologics. Their telephone Nos. are Geneva 7371 and 7372.

### CILKLOID

"Cilkloid," as its name suggests, is a surgical dressing, and is a very great improvement over oiled silk, which has been in general use for many years.

It is put up in two forms: the *Impervious* form and the *Perforated* form, which terms are self-explanatory.

The *Impervious* form is used as a protective covering for wet dressings, hot and cold packs, and over ointments. It is very soft and hence can be moulded to any form or size of dressing, which gives a decided advantage over oiled silk and other impervious materials used for dressings.

The *Perforated* form is applied direct to the wound, the perforations providing for air, drainage, and medication. It facilitates granulation, instead of retarding it. It is particularly superior in its use for skin grafts, mastoids, amputations, and all granulation wounds.

The announcement of the Company on another page is interesting.

### PARIOGEN TABLETS

The American Drug and Chemical Co., of Minneapolis, have produced a coal-tar product of so great merit as a vaginal douche that some Minneapolis physicians commend it in exceedingly high terms, and they use it almost exclusively in their practice as a douche in the treatment of leucorrhea, erosion of the cervix and catarrhal inflammations of the vagina. The Company will be glad to send any physician samples of their product with laboratory and clinical tests that cannot fail to interest you.

The Company's address is 324 Fifth Ave. South, Minneapolis.

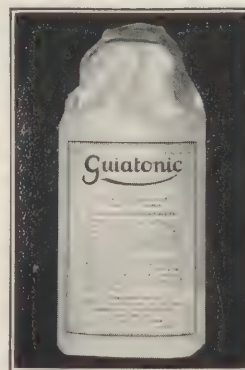
# Delayed or Incomplete Convalescence

Hardly any other stage in the course of an acute disease is attended by greater uncertainty than that of convalescence. Too often, patients may fail to gain their full strength and vitality; in other words, they fall just short of reaching that condition of well-being that may be considered complete recovery.

To practitioners, however, who have learned the recuperative value of Guiatonic from its repeated use in conditions of lowered vitality, convalescence causes little concern. They know that this remedy can be relied on to stimulate functional activity throughout the body, and thus help make convalescence *a short, safe and sure step to health.*

## Guiatonic

*A liberal sample for testing free to physicians. William R. Warner & Company, Inc. Manufacturing Pharmacutists since 1856. 113-123 West 18th Street, New York City.*



A palatable preparation of special salts of guaiacol and creosote which may be freely given to the weakest patient, without fear of gastric disturbance. *It contains no narcotics.*

Indicated in all depressed or debilitated conditions, or whenever a tonic is required.

## *I use* **Pneumococcus Antibody Solution** *because—*

It is a specific treatment for the lobar pneumonias caused by Types I, II or III pneumococcus.

It has been subjected to a thorough clinical trial over a period of six years in both hospital and private practice. It has been used in about 2,000 patients in private practice. Published reports cover nearly 1,000 cases.

When used early (on or before the third day) a definite shortening in the duration of the disease and a reduction of 50 per cent in the mortality rate has been reported.

Serum sickness and anaphylaxis have not been observed in any instance.

It contains the pneumococcus protective antibody in the purest form generally available.

Typing, as a preliminary procedure, is unnecessary and causes delay. Experience has shown that the most benefit is derived from very early treatment.

The dangerous bacteremia accompanying many cases of pneumonia can often be controlled by this agent, especially in Type I cases.

Intravenous administration is the preferred method, because the antibodies are thus made immediately available in the blood stream.

Thermal reactions, while they sometimes occur, are not dangerous and are easily controlled.

Physicians who are not familiar with this newer method of treating lobar pneumonia may obtain a comprehensive series of questions and answers by mailing the attached coupon request to H. K. Mulford Company, Philadelphia.

J-L

H. K. Mulford Company  
Mulford Building  
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Please send me, without charge or obligation, a copy of Mulford Multigram No. 24, describing preparation and use of Mulford Pneumococcus Antibody Solution.

Name .....

Address .....

74522

The Angier Chemical Company, of Boston, believe that they have given the medical profession in their Angier's Emulsion a highly ethical preparation that is unsurpassed in the treatment of the coughs and bronchial affections now very prevalent in all parts of the country and especially in the Northwest.

Angier's Emulsion is especially useful in the treatment of elderly persons and children because it is pleasant to take and does not produce digestive disturbances of any kind. Its results are early manifested and are lasting when used promptly upon a recurrence of the first symptoms that bronchial disturbances may re-occur.

The Angier Company will esteem it a privilege to be permitted to send any of our readers samples of their Emulsion, which will be sent upon request with carrying charges prepaid. Address the Angier Chemical Company, Boston 34, Mass.

### LISTERINE

"Listerine" is a mild antiseptic and detergent compound of drugs that have long been recognized as possessing antiseptic and detergent qualities, but ~~never~~ put together under so excellent a formula as in Listerine. No extravagant claims are made for this proprietary. It speaks for itself, and the great popularity of it has come from its merits.

Having done its work as an antiseptic and detergent for use on the mucous membranes, as a wash for the mouth and throat it is now put in a suitable form (a paste) for the teeth, and it is unexcelled for this purpose and should be recognized by physicians and dentists for its antiseptic qualities and because it is so pleasant to use in the mouth that it helps to create a habit among children of frequent and regular use.

### CONVALESCENCE

Satisfactory recovery from serious illness is often impossible unless the recuperative and reconstructive forces of the body are aided and supported by appropriate treatment. The aid needed is often very slight, but it must be of a character to definitely help the body to reestablish a nutritional balance and develop adequate recuperative and resistive power.

Clinical experience has shown that after the acute infections, such as colds, bronchitis, influenza, pneumonia, pleurisy, or after surgical operations like appendicitis, intestinal ailments, utero-ovarian ailments and so on, the early return to health often depends on the thought and care given to convalescent treatment. If Gray's Glycerine Tonic Comp. is prescribed, the result is seldom if ever in doubt. Unlike the effect of many remedies used to promote convalescence, that of Gray's Glycerine Tonic Comp. is not merely temporary stimulation. Instead its action is persistent and prolonged for it aids and reinforces natural functions and in this way increases the power and capacity of physiologic processes throughout the body. In other words, the appetite is improved, digestive and absorptive functions are activated and the resulting improvement in cellular nutrition insures a notable gain in vitality and strength. Weakness and debility disappear as vitality and strength appear. This tells why "Gray's" is so useful and effective in preventing complications or recurrences after the acute infections.



## TREATMENT OF BURNS

Burns, particularly of the first and second degree, treated promptly with the application of Antiphlogistine are relieved of pain, heat, and excessive inflammation. Antiphlogistine has an invigorating effect on the circulation, and through its hygroscopic property stimulates the exudation of serum rich in antibodies; it diminishes the tendency to excessive scar formation and accelerates the process of granulation and epithelialization.

## CREOSOTE AND LIME

Sollmann, in his Manual of Pharmacology, states that creosote possesses "very considerable antiseptic properties." Since 1830, when Reichenbach discovered this drug, it has been used in the treatment of tuberculosis and bronchial affections. There appears to be no doubt but that its administration does make for a much freer mucous secretion to the great relief of the patient.

For more than thirty years a solution of creosote and chloro-phosphate of lime has been used with excellent results both abroad and here. This mixture, Pautauberge's Solution is an exact combination of creosote and lime in an alcoholic menstruum, each tablespoonful containing two minims of creosote and eight grains of chloro-phosphate of lime.

Trial bottles of Pautauberge's Solution may be had by addressing George J. Wallau, Inc., 6 Cliff St., New York.



## Most Satisfactory for All Wet Dressings

The IMPERVIOUS Form of Cilkloid is largely used as an occlusive or protective covering for all wet dressings, hot and cold packs and over ointments. It is easily moulded to fit any form, size or shape of dressing. On account of its softness, it is much more satisfactory than oiled silk and other impervious materials once used. Is furnished in single or heavy thickness.

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Barley malt and hops, when brewed, fermented, and aged by an old-time manufacturer of the old-time product, produce a very delicious drink that is most invigorating to the tired mother or the nervously exhausted invalid.

Such a product is Glix; it is made by the Gluek Brewing Company, of Minneapolis; and it is prescribed by a very large number of Minneapolis physicians.

### NOW COSTS NO MORE

Super-Concentrated Antitoxin at the price of ordinary antitoxins is one of the good things announced with the dawn of 1927.

Many of our readers will recall when Super-Concentrated Diphtheria Antitoxin was first offered for

sale, in 1922, nearly five years ago, setting a new high standard of antitoxin quality.

The medical profession was quick to appreciate the advantages of Super-Concentrated Antitoxin, with its less bulk, less pain, quicker results, its freedom from turbidity and low protein content, thus minimizing serum sickness.

As a result of the increased demand and improved methods, the Mulford Laboratories, which originated and perfected this product, announce that they are now able to supply Super-Concentrated Antitoxin at the price of other antitoxins.

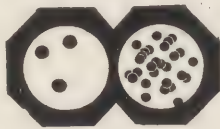
This will be good news, we know, to the medical and pharmaceutical professions generally, and to those desiring further information, we suggest writing to H. K. Mulford Company, Philadelphia, Pa.



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Dr. Marion A. Mead knows the business of providing nurses for physicians as no other person in Minneapolis has ever known it. Her experience in nursing service extends over thirty years, and this means a ripened judgment and a knowledge of all kinds of nurses that are invaluable.

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## ERGOAPIOL (SMITH)

Ergoapiol (Smith) is a non-narcotic agent designed expressly for physicians' use in the treatment of amenorrhea, dysmenorrhea, menorrhagia, and the menopause. Its use has become so general that substitution has also become a factor in its sale against which its manufacturers have found it necessary to protect both physicians and patients.

Absolute protection against such fraudulent substitution is now provided by impressing the letters M. H. S. on the inside of the gelatine capsule container of each in which ergoapiol (Smith) is dispensed. The letters convey no information whatever beyond the assurance that the patient receives what the physician prescribes.

The evil of substitution has never grown less, and will not cease until such steps as the above are taken by all manufacturers when such steps are practicable.

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Yohimbine Hydrochloride	1/12	gr.
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Yohimbine as an aphrodisiac acts upon the genital organs,  
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## SYMPOSIUM ON THE INTRAVENOUS INJECTION OF MERCUROCHROME

Since the original introduction, by Hugh H. Young, of Mercurochrome-220 as a therapeutic agent, it has been employed with startling results in an ever-increasing variety of conditions. Included among these are septicemias, pneumonia, genito-urinary infections, diseases of the skin (including erysipelas, furunculosis, gangrene, etc.), numerous infections and contagious diseases, such as typhoid and paratyphoid fevers, scarlet fever, malaria, syphilis, etc.

The statements of various authors regarding the stability of Mercurochrome have been investigated at the Loeser Laboratory in an experimental study extending over a period of two and one-half years. As a result, it has been proven that, contrary to report, a solution of Mercurochrome-220, if properly prepared, standardized, and biologically tested, and if properly stored in hermetically sealed, non-soluble glass ampoules, will remain stable over a long period of time. In an extensive Symposium on the Intravenous Administration of Mercurochrome-220 (published this month in the *Journal of Intravenous Therapy*) it has been shown that some of the causes of reported reactions may thus be eliminated—such, for instance, as result from hastily made, extemporaneous solutions.

The opinions of various authors on the question of dosage have been given much attention in this symposium. It is pointed out that Mercurochrome is primarily a mercury compound, depending upon

the action of mercury for its results. Any continued overdose, therefore, will result in symptoms of mercurialism. Although Young and his co-workers, at the outset, advocated the intravenous injection of 37 c.c. of a one per cent solution of Mercurochrome, it has since been shown that the injection of more conservative doses has correspondingly decreased or prevented the symptoms of mercurialism. On the basis of these reports ampoules of Mercurochrome, one per cent solution in varied dosage—20 c.c., 10 c.c. and 5 c.c., respectively—are now prepared at the Loeser Laboratory, 22 West 26th Street, New York, and are available, ready for injection.

The Symposium on the Intravenous Administration of Mercurochrome will be cheerfully mailed to physicians on request.

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No griping or pain; no nausea or gastric disturbances; not habit forming.

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## PUBLISHER'S DEPARTMENT

### MEAD'S DEXTRI-MALTOSE

In their announcement this month, to be found on another page, Messrs. Mead Johnson & Company call attention to the fact that their Dextri-Maltose furnishes a notable measure of safety in infant feeding as it can be taken in sufficient quantities by the infant to *assure* a decided gain in weight, which the ingestion of other sugars would almost certainly prohibit by fermentative diarrheas that would follow their use.

The use of Mead's Dextri-Maltose by the physician enables him to keep a close account of the baby's condition, and to ward off difficulties by a simple quantity change in diet that otherwise might become serious in a brief time.

The "Mead Johnson Policy" in infant feeding is to have the physician, and not the parent or nurse, determine the diet of the child, and to furnish unlabeled materials to meet the needs of the child and to be prescribed by the physician. Literature on the policy is furnished only to physicians by Mead Johnson & Company, Evansville, Indiana.

### THE VICTOR NATION-WIDE SERVICE

The Victor X-Ray Corporation announce that from their factory in Chicago, and their 33 Direct Branches throughout the country, it is now able to give a nation-wide service, and that they recognize their obligation to give the users of their ap-

paratus expert advice or expert service in making a Victor machine of the greatest value possible to its owner.

The Victor people recognize that many men, as well as many women, fail to get the best service out of their machines, and it is for such people they desire to render a valuable service such as only an expert can give and often only by personal instruction. For this reason the "Victor Nation-Wide Service" has been established, and they tender it to the medical profession.

### THE EITEL HOSPITAL

The Eitel Hospital of Minneapolis extends a cordial welcome to the hospital to all physicians visiting the city. Any physician who is interested in hospital work, from any standpoint, will find it interesting to talk over and see the way things are done at the Eitel. The corridors are wholly free from dirt and odors and unnecessary noises, and as bright as if the building were erected in 1925. The food furnished patients, nurses, and attendants is not the abhorred "hospital" food; it is much like home food. The treatment of patients is not the machine work of so-called heartless nurses; it manifests at every point a genuine interest in the sick person.

The Eitel is a hospital where scientific work is done, and it is a hospital where the value of good cheer is not underestimated. Every visiting physician will find a hearty welcome at the Eitel Hospital, which faces the beautiful Loring Park of Minneapolis.

## Neurasthenia

In the symptom-complex of neurasthenia, usually the result of prolonged mental strain or overwork, there is marked depression of the vital forces and nervous debility. In such conditions

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is of paramount value as a nerve-tissue reconstructive. Not only does it stimulate nerve-cell functions and improve nerve-cell nutrition, but it acts also as a stomachic bitter, increasing the appetite and improving the digestion.



## SCARLET FEVER STREPTOCOCCUS ANTITOXIN (LEDERLE)

Scarlet Fever Streptococcus Antitoxin as prepared by the Lederle Antitoxin Laboratories provides not only the antitoxin principles but the antibacterial bodies procured by immunizing horses with living streptococci known to be the active agents in Scarlet Fever.

The dosage to be employed is a sufficient amount of the antitoxin to neutralize 600,000 skin test doses. Should symptoms not be entirely relieved in twelve hours then this dosage should be repeated. In the majority of cases one administration only is necessary.

Further information may be secured by applying to the Lederle Antitoxin Laboratories, 633 Andrus Bldg., Minneapolis.

### POSTGRADUATE INSTRUCTION

The Chicago Eye, Ear, Nose and Throat College invites every physician interested in postgraduate instruction in the diseases of these organs or in the fitting of glasses to write the Secretary of the College for information concerning their courses and how the professors in the College conduct their work.

This institution was founded nearly thirty years ago, and at no time does it ever lack material to give instruction a practical character. Its work goes on the year round, and physicians are invited to take short or long courses at any time.

For any information desired, address the Secretary, Dr. Oscar B. Nugent, 235 Washington Street, Chicago.

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When used early (on or before the third day) a definite shortening in the duration of the disease and a reduction of 50 per cent in the mortality rate has been reported.

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It contains the pneumococcus protective antibody in the purest form generally available.

Typing, as a preliminary procedure, is unnecessary and causes delay. Experience has shown that the most benefit is derived from very early treatment.

The dangerous bacteremia accompanying many cases of pneumonia can often be controlled by this agent, especially in Type I cases.

Intravenous administration is the preferred method, because the antibodies are thus made immediately available in the blood stream.

Thermal reactions, while they sometimes occur, are not dangerous and are easily controlled.

Physicians who are not familiar with this newer method of treating lobar pneumonia may obtain a comprehensive series of questions and answers by mailing the attached coupon request to H. K. Mulford Company, Philadelphia.

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Please send me, without charge or obligation, a copy of Mulford Multigram No. 24, describing preparation and use of Mulford Pneumococcus Antibody Solution.

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## THE CONTROL OF DIPHTHERIA

Notwithstanding the fact that the prevention of diphtheria is engaging the attention of city boards of health and private practitioners throughout the country, and many thousand immunizing treatments have already been given, it will be a long time, we fear, before diphtheria antitoxin goes out of use, or even before the need for it becomes appreciably less than it is now. Much more extended work along the line of prevention will have to be done than has as yet been done, before diphtheria disappears from the list of children's diseases.

The makers of Diphtheria Antitoxin, therefore, are to be commended for doing their utmost to improve the quantity of the antitoxin and the syringe package in which it is put up. Parke, Davis & Co., who began supplying diphtheria antitoxin more than thirty years ago, announce some recent developments in the purification of this product and the concentration of the dose volume. See their advertisement in this issue, "Latest Refinements in Diphtheria Antitoxin."

## THE MINNESOTA SANITARIUM

The Minnesota Sanitarium is a so-called cottage sanitarium and is under the professional care of Drs. Leo. M. Crafts and Julius Johnson as Medical and Associate Medical Directors, respectively, but it is open to all physicians in good standing. Its work is confined to the care and treatment of nervous and mild mental diseases. Alcoholic and drug addicts are received.

Patients may be treated by their own physicians or may be left to the care of the Medical Director.

Mr. H. M. Huber is the resident manager and will give information concerning rates, which are always moderate.

The location (Fifth Ave. South and Franklin) is very desirable, and the building is the former residence of a wealthy family.

## POST GRADUATE HOSPITAL AND MEDICAL SCHOOL

The Post Graduate School, of Chicago, offers very attractive courses in all branches of medicine and surgery with special courses giving opportunity for intensive work under the personal supervision of trained instructors, which brings results that are very surprising and equally gratifying. Such results are obtained because, first, the clinical material is abundant; second, because the student is prepared to do hard work! and, third, because the individual instruction by a trained teacher directs the efforts of the student to the best advantage.

A few weeks spent in this way for a couple or more years will put a good man at the head of any group of men who do not do like work. The man who does not do such work is not practicing medicine as he should practice it.

Correspondence with this School, located at 2400 South Dearborn Street, Chicago, will give any physician, in general or special work, a lot of interesting and valuable information.

Coughs, colds and bronchial affections yield to treatment with creosote and lime. Pautauberge's Solution, a tablespoonful in half glass of sweetened water 3 or 4 times daily, immediately before or after meals.

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## KENILWORTH SANITARIUM

Kenilworth is a suburb of Chicago, six miles north of the city, on the C. & N. W. Railway, where this very high-grade sanitarium is located and where it was established twenty-two years ago by Dr. Sanger Brown.

Its buildings and grounds may properly be called ideal for its work, that is, for the treatment of nervous and mental diseases.

The building is attractive exteriorly with handsome grounds; and the interior shows that infinite care and skill were spent upon it to adapt it to the needs of the class of patients treated there; and the staff is a warranty that the patients of Kenilworth will receive every possible aid to recovery.

Drs. Sherman Brown, Mable Hoiland, and Sanger Brown make up the resident staff of the Sanitarium.

## MASSAGE FOR WOMEN AND CHILDREN

The value of massage when properly given is very great, but it is of very doubtful value, if not dangerous, when improperly given. Its value, is best manifest, say, in the treatment of the after-effects of infantile paralysis, but it can be given in such a case only by an expert and under the direction of a physician or surgeon. Such an expert is Mrs. E. B. Rideout, who has had twenty years' experience and who now has the confidence of the medical men in Minneapolis who have given her work. She has recently associated with her Miss I. Crawford Anderson, a woman thoroughly trained in the London hospitals. The two together can take care

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of the growing work tendered them, giving treatments in their offices, the hospitals, or in the home of the patient, which Mrs. Rideout could not do heretofore because of lack of time.

#### THE OCONOMOWOC HEALTH RESORT

Wisconsin is celebrated for its health resorts, but health resorts are not all alike; for instance, the Oconomowoc Health Resort is devoted to the treatment of nervous and mild mental cases, and in the past twenty years has made a splendid reputation with the medical profession for its success in this line of work.

The equipment is very complete, including extensive baths and occupational departments under the care of specially trained teachers. They work for a complete restoration on the part of their patient, giving to each patient a degree of personal attention that insures such results.

The staff of the Resort is composed of Dr. Arthur W. Rogers, Physician in charge; Dr. James C. Haskell, Medical Superintendent; and Dr. Fred Gessner, Assistant Physician.

Oconomowoc, the home of the institution, is in Wisconsin, thirty miles out of Milwaukee.

#### USE OF BIOLOGICALS GROWING

A survey of the drug trade reveals the encouraging information that the year 1926 has witnessed a better appreciation on the part of distributors of the importance of proper refrigeration for biological products. Eli Lilly and Company report greatly increased demands for Lilly Biologicals during the past year as evidence that the public is awakening to the importance of disease prevention measures

and is consulting the medical profession for advice and treatment.

It is encouraging information for many reasons. There can be no doubt of the value of such products as Lilly Diphtheria and Tetanus Antitoxins, Smallpox Vaccine, Toxin-Antitoxin Mixture, Scarlet Fever Antitoxin and the new one-dose immunization treatment for children, Ricinoleated Antigen, Scarlet Fever Immunizing.

It has long been a handicap to the physician not to be able to determine whether or not the product he was using had been properly stored and it is gratifying to learn that everywhere there is a growing realization of the importance of proper refrigeration.

One state board of health ruled that biological preparations that are not kept within the provisions of the Pharmacopeia shall be deemed adulterated under the State Food and Drugs Act. The South Central States Association of Food, Feed and Drug Officials has adopted resolutions requiring all distributors of biologicals to store their products in accordance with the requirements of the U. S. P. Another state stamps biological products which on inspection are found to have been improperly stored.

The distribution of Lilly Biologicals makes them readily available to the profession everywhere. Reliable pharmacists will be found in practically every community who are very particular in observing proper storage conditions. A trustworthy prescription pharmacist is a great convenience and it should be a source of much satisfaction to physicians to have at hand the facilities of a well appointed pharmacy.

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## PUBLISHER'S DEPARTMENT

### LAVORIS

When Lavoris was put upon the market it was intended for use as a mouth-wash, and its composition was no secret. It was the first time zinc chloride was put in a stable form and made agreeable to the taste in the usual manner.

Lavoris was at once adopted by medical men for its great healing qualities whenever it comes into contact with the mucous membrane. It is one of the great successes of the past decade, and its success can be ascribed only to its real merit. It has never been exploited in an unethical manner.

### THE MELLIN'S FOOD COMPANY OF BOSTON

It has been noted in these columns many times in the past twenty or thirty years that the Mellin's Food Company of Boston has always worked along the lines in infant feeding laid down by the leading pediatricians of the world. As a result of this policy Mellin's Food has never been surpassed as a substitute for mother's milk.

In their announcement on another page the conditions met in the infant deprived of mother's milk are stated as malnutrition, marasmus, infantile atrophy, and athrepsia. For the first of these conditions, that is, malnutrition, a formula of feeding is given, and forms a key for the treatment further required. The Company issues a pamphlet exclusively devoted to the subject which is sent free to physicians.

### CAPROKOL

Messrs. Sharp & Dohme, of Baltimore, Md., is one of the best known of the older houses, having produced in their laboratories many of the physicians' remedies now in almost universal use. Among such products the house believes their Caprokol stands very high.

Caprokol is given for infections of the urinary tract. It possesses nearly 50 times the germicidal power of phenol and is non-toxic in therapeutic doses.

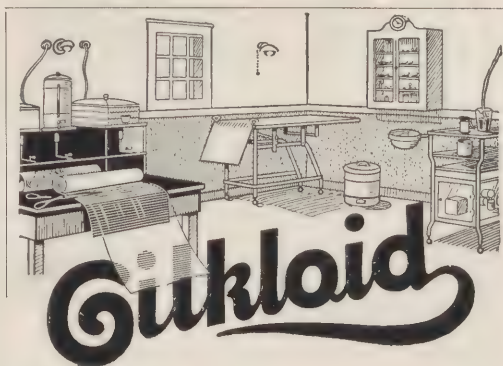
In the manufacturers' literature are given clinical reports by such distinguished physicians as Roy B. Heuline, Austin Wood, and others, to establish the clinical value of Caprokol; and the house desires to put such evidence of this value in the hands of all interested physicians.

### THE N. P. BENSON OPTICAL CO., INC.

From time to time the Benson Optical Co., Inc., has an announcement to make which is of special interest to our readers, and such an announcement is made by them on another page. It refers to what they call "the latest triumph in optical science," namely, the complete elimination of objectionable colors in bifocals, which is accomplished by their Nokromes.

The physician who is prepared to give his patients glasses of this kind gets their confidence and good-will and makes new friends. He is the man who is looked upon as the progressive physician.

The Benson Optical Co. has branches in Duluth, Aberdeen, La Crosse, Bismarck, and Eau Claire, and each branch will render quite as good service as the parent house in Minneapolis. They invite correspondence with physicians.



## Most Satisfactory for All Wet Dressings

The IMPERVIOUS Form of Cilkloid is largely used as an occlusive or protective covering for all wet dressings, hot and cold packs and over ointments. It is easily moulded to fit any form, size or shape of dressing. On account of its softness, it is much more satisfactory than oiled silk and other impervious materials once used. Is furnished in single or heavy thickness.

### For Burns, Ulcers, Etc.

The PERFORATED Forms of Cilkloid is applied direct to wound—air, drainage and medication being provided for through the perforations of the transparent tissue. The Cilkloid serves as a foundation for the forming granulations but does not adhere to them. Also excels for skin grafts, mastoids and amputations and all granulating wounds.

## May Be Secured from All Physicians' and Hospital Supply Houses

### IMPERVIOUS FORM

"Standard" (Single Weight) 9 in. x 4 yds.....	\$1.00
"Hospital" (Single Weight) 18 in. x 4 yds.....	2.00
"Standard Heavy" (Double Wgt.) 9 in. x 4 yds. 1.50	
"Hospital Heavy" (Double Wgt.) 18 in. x 4 yds. 2.50	

### PERFORATED FORM

(Double Weight only)

"Standard Perforate" 9 in. x 4 yds.....	\$1.75
"Hospital Perforate" 18 in. x 4 yds.....	3.00

Sample on Request

## The Cilkloid Company

508 S. 3rd Ave.

Marshalltown, Iowa

# Want X-Ray Supplies "P-D-Q"?

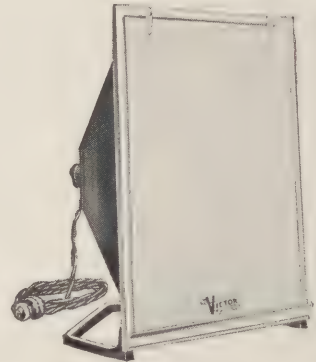
There are over 30 District Branches now established by the Victor X-Ray Corporation throughout U. S. and Canada. These branches maintain a complete stock of supplies, such as X-ray films, dark room supplies and chemicals, barium sulphate, cassettes, screens, Coolidge tubes, protective materials, etc., etc. Also Physical Therapy supplies.

The next time you are in urgent need of supplies place your order with one of these Victor offices, conveniently near to you. You will appreciate the prompt service, the Victor guaranteed quality and fair prices.

Also facilities for repairs by trained service men. Careful attention given to Coolidge tubes and Uviarc quartz burners received for repairs.

**VICTOR X-RAY CORPORATION**  
Main Office and Factory: 2012 Jackson Blvd., Chicago

Minneapolis Branch  
550-4 Baker Arcade Bldg.



**Victor Radiograph Illuminator**

A distinct improvement in negative observation apparatus

All Metal and Glass

Complete for 110-volt current, \$21.90

Quality Dependability Service Quick Delivery  
~~ Price Applies to All ~~

## A Progressive Loss of Weight

is always significant of some deficiency or derangement of the bodily nutrition. It is a danger signal that the practitioner knows he never should ignore.

The tissue-building processes of the body must be aided and promoted at once, and no reconstructive will render more dependable service in this direction than Guiatonic.

Rational in composition, and prompt and positive in effect, Guiatonic is unexcelled as a means of checking physical decline and restoring nutritional balance.



## Guiatonic

*A liberal sample for testing free to physicians. William R. Warner & Company, Inc. Manufacturing Pharmacutists since 1856. 113-123 West 18th Street, New York City.*

A palatable preparation of special salts of gualacol and creosote which may be freely given to the weakest patient, without fear of gastric disturbance. *It contains no narcotics.*

Indicated in all depressed or debilitated conditions, or whenever a tonic is required.



## CAMPHO-PHENIQUE

Campho-Phenique is an antiseptic that has proven its efficiency as a preventive of suppuration in its use in emergency surgery. It is now put up in liquid, powder, and ointment form, which gives the surgeon a choice as to the form which is best adapted to the wound to be treated. As it is not at all bulky the three forms can at least be kept in the physician's office and one form carried in his bag. The powdered form is best for the bag, and meets all the needs of the general practitioner.

Campho-Phenique has been many years before the profession, and its use is very general.

## ALLONAL

The Hoffman-LaRoche Chemical Works, of New York, feel justified, and they have been so justified by the medical profession, in calling themselves "Makers of Medicines of High Quality." Such a medicine given the profession by them is Allonal, whose value and efficiency can be demonstrated by giving it in a single case of insomnia, especially if it is a case where the usual remedies for insomnia have been tried. Allonal produces a refreshing sleep, for it is not narcotic. It gives a restful sleep, especially in case of pain, which it removes quickly. It is perfectly safe and leaves no bad effects whatever.

The Company's announcement on another page is interesting.

## REST HOSPITAL

The Rest Hospital of Minneapolis is a well-known hospital that has been doing admirable work for many years, and has been under the same management for many years. It is specially equipped to care for medical and nervous cases, and it admits the patients of all reputable physicians.

The managers of Rest Hospital are two registered nurses, M. R. Moran and Bea O'Brien, who give their personal attention to every patient who does not employ a private nurse, and their assistant nurses are women of large experience and are especially trained for this line of work. The medical directors are Drs. A. S. Hamilton and H. B. Hannah.

## DIPHTHERIA TOXOID

Diphtheria Toxoid, also known as Diphtheria Anatoxine-Ramon, is a non-toxic modified diphtheria toxin, used for active immunization against diphtheria. It is described as being prepared by the action of formaldehyde on diphtheria toxin, and as being free from serum proteins.

The results of immunization are very similar to those obtained with the toxin-antitoxin mixture, the chief difference being that protection develops more rapidly after the use of Toxoid.

Diphtheria Toxoid produces an active immunity in from three to eight weeks, or about one-fourth the time required with Toxin-Antitoxin Mixture, and a certain degree of immunity is produced even sooner.

Diphtheria Toxoid is available through the Mulford Laboratories, who offer it not as a substitute for Toxin-Antitoxin Mixture, but rather in keeping with their reputation as the pioneer biological laboratories and to meet a certain demand which exists for this product.

Those interested in Diphtheria Toxoid may obtain a descriptive circular upon request to H. K. Mulford Company, Philadelphia, Pa.

# Three Essentials

## Super-Concentrated Diphtheria Antitoxin

For curative treatment and immunization of contacts.

An Antitoxin of very low protein content, small bulk, highly refined, which minimizes serum sickness and is rapidly absorbed.

Less bulk—Less pain—Quicker results.

DOSAGE—1000, 3000, 5000, 10,000, 20,000 units.

*Supplied in Mulford Perfected Syringes,  
ready for immediate use*

## Diphtheria Toxin-Antitoxin Mixture

To produce a lasting immunity, which develops in about eight weeks and continues effective for some years, probably for life.

Immunization of children of pre-school age and up to 10 years is recommended.

DOSE—3 injections of 1 cc each, at 7-day intervals.

*Supplied in packages containing*

- 3-1 cc vials ( 1 immunization ).
- 30-1 cc vials (10 immunizations ).
- 10-cc vials ( 3 immunizations ).
- 30-cc vials (10 immunizations ).

## Schick Test Toxin

To determine susceptibility to diphtheria.

DOSE—0.1 cc injected between the layers of the skin.

*Supplied in packages containing  
sufficient material for 50 tests*



H. K. MULFORD COMPANY

Philadelphia, U. S. A. 72398

# Mulford

THE PIONEER BIOLOGICAL LABORATORIES

## ESSENTIALS FOR TREATMENT OF MENTAL DISEASES

The Mounds Park Sanitarium, of St. Paul, has been running, on another page, a series of six points deemed the "Essentials for Treatment of Mental Diseases." The six points are named in each announcement, and one point is specifically stated and discussed. In our current issue "Essential No. 6" is stated as "An Atmosphere of Cheerfulness." That may well be called the most essential of the six points, and this the Sanitarium well knows, and is equipped to furnish such an atmosphere, with facilities for meeting the other five conditions it has laid down for its work of treating mental disease.

Correspondence with the Sanitarium is cordially invited.

### A NEW ESKAY PRODUCT

An entirely new and unique product under the trade name of ESKAY'S GLYCERO-COD has recently been placed on the market by Smith, Kline & French Company of Philadelphia, manufacturers of the well known ESKAY'S NEURO PHOSPHATES. Their latest product is a fifty per cent emulsion of cod liver oil made from the highest grade of Lofoten Cod Liver Oil, combined with calcium glycerophosphate in an extremely palatable form.

In conditions where the blood-phosphorus and blood-calcium are at low levels, Eskay's Glycero-Cod is specially indicated, just as it is in fractures

and bone diseases generally. It is during childhood that faulty conditions of blood and bone usually occur, and the creamy nature of the emulsion makes it extremely acceptable to children. Eskay's Glycero-Cod is a strictly ethical preparation and is presented to the medical profession only, members of which are cordially invited to send to Smith, Kline & French Company, 105 N. 5th Street, Philadelphia, Penn., for samples and descriptive literature.

### THE LINCOLN HOSPITAL

The Lincoln Hospital of Aberdeen, S. D., is one of a few very high-grade hospitals that have been built in the past few (half dozen or so) years in the smaller cities of the Northwest and have furnished such cities a hospital service equal to the best obtainable in the largest cities of the country.

It will be seen by reference to the Hospital's card on another paper that the Lincoln Hospital building is a handsome structure, and large enough to meet the self-contained needs of an institution of this kind. It maintains the usual departments,—of medicine, surgery, obstetrics, etc. It has a fine and a modern training-school for nurses; and its laboratories and mechanical equipment, such as x-ray apparatus, etc., are complete and modern.

The Hospital has been rated and standardized by the American College of Surgeons, and its Training-School for Nurses conforms to American standards for training-schools.

Its staff is composed of men of high standing in the profession.



## DESCHIENS' SYRUP

Of Hemoglobin

Your patients with anemic tendencies will benefit by taking Deschiens' Syrup. It is a drugless treatment, an excellent example of opotherapy. Prescribed a tablespoonful in water before or after each of the two principal meals.

Samples and Literature

GEORGE J. WALLAU, Inc.

6 Cliff St., New York, N. Y.



Registered Trade Mark

### IN ARTERIOSCLEROSIS

Animasa is a treatment directed at the cause. An organic remedy used with successful clinical results both here and in Europe. Also indicated in Hypertension and as a prophylactic. Write for facts you should know.

Organo Therapeutic Corp.  
109 W. 57th St., New York

## POST GRADUATE COURSES

IN ALL BRANCHES FOR  
PHYSICIANS AND SURGEONS

*Laboratory and X-Ray Training for Physicians and Technicians*

Graded Courses in EYE, EAR, NOSE AND THROAT

*For further information address*

POST GRADUATE HOSPITAL AND MEDICAL SCHOOL, 2400 S. Dearborn St., Chicago, Ill.



## IMPORTANCE OF LUBRICATION IN THE TREATMENT OF CONSTIPATION

The two chief factors in the production of constipation are an insufficient quantity of moisture in the intestinal tube and diminished or lost peristaltic action of the intestinal musculature. Deficient moisture permits of a drying out, hardening and loss of plasticity or mouldability of the fecal content. It is brought about partly by failure to ingest a sufficient amount of fluid or by its abnormal absorption from the intestine into the blood or body tissues. But the chief cause is failure of the mucous glands to secrete sufficient natural lubricant.

It thus becomes necessary for the physician to use an agent that will properly supplement the depleted secretions of the bowel, soften the hardened waste, and so assist the return of normal peristalsis. Nothing accomplishes these purposes better than a lubricant such as Nujol, because the use of Nujol has been found to overcome constipation without the disadvantages imposed by cathartics.

An authority of national repute in advising against the use of cathartics, states:

"They cannot correct constipation. Like opium, the frequency and the amount of the cathartics must be increased to produce results.

"The long-continued use of cathartics gives rise to hemorrhoids, gastric and intestinal catarrh, appendicitis, and intestinal toxemia.

"Cathartics force partly digested meat fibers and sugars into the colon, both of which increase the number of pathogenic micro-organisms in the colon as well as enhancing the toxicity of their poisons."

For these reasons, progressive physicians are tending more and more to the use of Nujol, the ideal

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Interest on  
Checking Accounts**



**THE MINNESOTA  
LOAN & TRUST CO**  
405 Marquette Ave

**Since 1883**

## ENDOCREODIN

In  
Respiratory  
Affections

### ENDOCREODIN

(Sodium Iodide & Guaiacol)

Eliminates  
Digestive  
Disturbances

**Indicated in Asthma, Bronchitis, Influenza, Bronchial Pneumonia and other respiratory affections.**

Each 20 mil Ampoule Contains:

22½ gr. Sodium Iodide 1.5 Gm.

¾ gr. Guaiacol 1,049 Gm.

Combined In a Sterile Isotonic Solution

Shipped

In packages of 6 Ampoules.

In 25 Ampoules for Office use.

In 100 Ampoules for Hospital use.

**TRY A PACKAGE FOR REAL RESULTS**

"The best is none too good for intravenous use"

Write for "Direct Medication"

**Intravenous Products Co. of America Inc.**  
239 Fourth Ave., New York



## LINCOLN HOSPITAL

Founded 1920

Building Fire-Proof.

The hospital has been rated and standardized by the American College of Surgeons. It is modern in every respect, and equipped for the comfort and safety of its patient.

The Hospital maintains a medical service, scientifically co-ordinated. This Service covers Medicine, Surgery, Obstetrics, Pediatrics, and all of the specialties.

The Hospital conducts a Training-School for Nurses. The course of training covers three years and conforms to standardized requirements for entrance and graduation. Additional training is offered to young women preparing for collateral occupations, such as Surgical Supervising, X-Ray, Physiotherapy, and Laboratory.

**THE LINCOLN HOSPITAL**

421 South Lincoln Street

Aberdeen, South Dakota

lubricant, in many cases of constipation because it works in a more natural way.

Nujol makes its way through the thirty feet of the intestinal canal. It mixes with and lubricates the bowel contents. Thus the feces are kept soft and moist and are able not only to pass easily along the intestinal canal, but to be evacuated without straining and in a natural manner.

Nujol penetrates layers or accumulations of waste that sometimes adhere to the walls of the intestinal tube. Nujol softens and detaches the collection of waste bit by bit until the layers or accumulations are entirely removed. To accomplish this requires time, but Nujol is especially valuable when such conditions exist.

Nujol will not cause violent peristaltic activity as do cathartics. Nujol cannot be acted upon by the

digestive juices nor absorbed by the system. Every drop of Nujol that enters the body passes out of the body by the intestinal tract. Since Nujol is an intestinal lubricant, its action is entirely unlike that of castor oil or laxatives.

Nujol protects the delicate lining of the intestine, spreads over irritated or abraded spots and gives them an opportunity to heal.

Tests have shown that Nujol absorbs many poisonous or irritating substances that have formed and have been allowed to remain in the bowel as a result of stagnation. It holds them in solution and so carries them out of the body. Consequently, Nujol, by lubrication, helps Nature to overcome constipation, prevent stagnation and protect against autointoxication.

## ELECTROLYSIS FOR SUPERFLUOUS HAIR

The only permanent cure known for superfluous hair, moles, warts, etc. I positively guarantee my work to be permanent. No pain or scars. I use Multiple Electrolysis (many needles,) the quickest, cheapest and most reliable of all electric needle methods. No pupils employed. *Tel. Atlantic 7043.*

Special attention given to cases referred to me by physicians.

**A. B. WILLISON**

SUCCESSOR TO

ELLA LOUISE KELLER

NEW YORK

343 LOEB ARCADE, MINNEAPOLIS

CHICAGO

*For Professional Service*

### Mead's Nurses Registry

MARION A. MEAD, M.D., Registrar

871 Curtis Hotel, Minneapolis, Minn.

Thirty years experience in Nursing Service in the  
City of Minneapolis

Registered, Graduates and Practical Nurses  
Hospital and Office Positions Filled

Telephone—Geneva 8434

If no answer call Atlantic 4400, Curtis Hotel  
Minneapolis, Minn.

DRINK

# Gliss

ALWAYS GOOD

**BARLEY MALT and HOPS**

Brewed, fermented and fully aged like the  
old-time product.

*It's Most Delicious*

For Home Delivery Phone Cherry 3631

**THE GLUEK COMPANY, Minneapolis**



# ERGOAPIOL (Smith)

For  
**AMENORRHEA  
DYSMENORRHEA  
MENORRHAGIA  
METRORRHAGIA  
ETC.**

ERGOAPIOL (Smith) is supplied only in  
packages containing twenty capsules.

DOSE: One to two capsules three  
or four times a day. < < <

SAMPLES and LITERATURE  
SENT ON REQUEST.

MARTIN H. SMITH COMPANY, New York, N.Y., U.S.A.



## PUBLISHER'S DEPARTMENT

### PITUITARY EXTRACT (LEDERLE)

The employment of an active Pituitary Extract ensures adequate results in emergencies.

Pituitary Extract (Lederle) provides a potent product the strength of which is designated in units which permits accurate dosage. It is of value in parturition and also in post surgical shock.

Full information upon this preparation can be secured by communicating with Lederle Antitoxin Laboratories, 633 Andrus Bldg., Minneapolis, Minn.

### LEG ULCERS

These stubborn and distressing cases frequently refuse to yield to ordinary treatment. Often it is a matter of weeks, sometimes months, before they are healed. Where there is no specific or organic condition which absolutely precludes it, the intelligent and persistent use of Antiphlogistine will bring about the desired results.

### DESCHIENS' SYRUP

Anemia and its associated manifestations suggest a need to rehabilitate the blood. Where the usual drugs are ineffective opotherapy is often of definite value.

Deschiens' Syrup contains living hemoglobin the hemopoietins of the blood plasma and the minimal substances of the total blood. It is an excellent example of opotherapy.

Deschiens' products are manufactured in France; and the American agents George J. Wallau, Inc., 6 Cliff St., New York, N. Y., offer samples to interested physicians.

## REMOVAL NOTICE

The Minneapolis office of the Victor X-Ray Corporation, has been removed to 550-554 Baker Arcade Bldg., from their former location on Marquette Ave. The increase in business for their machines required larger quarters, and the Company has moved into very attractive office and sales rooms.

### TIMING BOWEL ACTION: "AN ALIMENTARY TIME TABLE"

Messrs. William R. Warner & Co. have issued a brief circular giving a "Map of the Alimentary Tract" and a "Time Table" showing the course and the time, normally and otherwise, of the passage of food from the mouth through the tract, covering periods, respectively, of 19, 28, 46, and 18 hours, the first-named period being the normal and the last-named being the time of action as restored by Argarol after being abnormal.

Argarol is an emulsion of mineral oil and agar-agar whose action in the bowel is simply mechanical; that is, to supply moisture by the agar-agar and a lubricant by the oil.

Messrs. Warner & Co. desire to have every physician in the country receive, free and carriage charges prepaid, two regular six oz. bottles of their product (Argarol) and a copy of their chart and time table.

If you have not already received them, the Company will be glad to send them to you and will do so upon request, which may be made on a postal card addressed to William R. Warner & Co., New York.

## INFECTIONS OF THE URINARY TRACT QUICKLY RESPOND TO TREATMENT WITH

# CAPROKOL

(HEXYLRESORCINOL S & D.)

This remarkable substance not only possesses approximately 45 times the germicidal power of phenol, but is non-toxic in therapeutic doses.

Clinical reports by Roy B. Henline, Austin Wood, William J. Scott, Damon A. Brown, Veader Leonard and others definitely establish the therapeutic value of this product as an efficient internal urinary germicide.

Complete bibliography and literature descriptive of the scientific and clinical phases of CAPROKOL, (Hexylresorcinol, S & D.) will be sent upon request.

**FOR ADULTS:**—Soluble Elastic Capsules CAPROKOL, (Hexylresorcinol, S & D.)  
Supplied in prescription boxes of 100 Capsules.

**FOR CHILDREN:**—Solution CAPROKOL, (Hexylresorcinol, S & D.)  
Supplied in four-ounce prescription bottles.

**NOTE:**—Diuretic drugs including Sodium Bicarbonate and large quantities of fluids should not be employed during treatment with CAPROKOL, (Hexylresorcinol, S & D.)

## SHARP & DOHME BALTIMORE

NEW YORK    CHICAGO    NEW ORLEANS    ST. LOUIS    ATLANTA    PHILADELPHIA  
                 KANSAS CITY    SAN FRANCISCO    BOSTON

## CREOSOTONIC

"Creosotonic" is a preparation of creosote which is palatable and is tolerated by the most delicate stomach. The principal ingredients of Creosotonic are creosote, guaiacol, and compound hypophosphites, which are prescribed extensively in the throat and chest diseases prevalent at this season of the year.

A new announcement of the manufacturers, The Anasarcin Chemical Co., Inc., appears on another page of this issue, and invites the attention of physicians.

## INEBRIATES AND DRUG ADDICTS

There are many alcoholic and drug addicts who do not want to take treatment in their home towns or cities, as there are also many such whom their home physicians do not want to treat for various reasons. For all such patients The Murray Institute of Minneapolis may be commended. The Institute has been under the same management for 30 years, and can refer to patients in all parts of the Northwest.

The treatment is ethical and scientific, and no complaint from a physician sending a patient to the Institute has ever been received.

The Institute is open at all times to physicians who are invited to visit it and learn of its work. It is located at 620 South Tenth Street, Minneapolis.

## A MATERNITY HOME

Practically every family physician must meet, and meet often, the problem of giving advice to the expectant mother of an illegitimate child. This practically means that the physician is called upon to give information about maternity homes. This is apparently a slight matter, but, in reality, it is a serious one, and calls for careful consideration.

A well-conducted home of this kind is said to be "The Willows" located at 2929 Main Street, Kansas City, Mo., which will send any physician, upon application, a 90-page illustrated catalogue booklet.

## IS THERE A STANDARD SUPRARENAL EXTRACT?

The pressor principle of the adrenal medulla is best known by its original name—Adrenalin—the name given it by its discoverers in 1900. A variety of other names have been invented to describe this active principle as offered in commercial form by other houses; but when the term "Adrenalin" appears in print it is associated in the reader's mind with the house of Parke, Davis & Company.

Adrenalin is not made by synthetic means: it is the natural product derived from suprarenal glands, and the natural product is levorotatory. Parke, Davis & Company stress the fact that their manufacturing process not only yields the levorotatory (active) extract, but also that the process is so designed as to *keep* that extract in its active levorotatory condition.

See their advertisement elsewhere in this issue.

Coughs, colds and bronchial affections yield to treatment with creosote and lime. Pautauberge's Solution, a tablespoonful in half glass of sweetened water 3 or 4 times daily, immediately before or after meals.

Samples and literature

GEORGE J. WALLAU, Inc.,

6 Cliff St., New York, N. Y.

# PAUTAUBERGE'S SOLUTION

# ANIMASA

Registered Trade Mark

## IN ARTERIOSCLEROSIS

Animasa is a treatment directed at the cause. An organic remedy used with successful clinical results both here and in Europe. Also indicated in Hypertension and as a prophylactic. Write for facts you should know.

Organo Therapeutic Corp.  
109 W. 57th St., New York

## POST GRADUATE COURSES

IN ALL BRANCHES FOR  
PHYSICIANS AND SURGEONS

*Laboratory and X-Ray Training for Physicians and Technicians*

Graded Courses in EYE, EAR, NOSE AND THROAT

*For further information address*

POST GRADUATE HOSPITAL AND MEDICAL SCHOOL, 2400 S. Dearborn St., Chicago, Ill.



## PHILLIPS' MILK OF MAGNESIA

Physicians everywhere have a most kindly and enthusiastic interest in Phillips' Milk of Magnesia. This old reliable, the pace-maker in the control of hyperacidity without inflating the stomach, is freely prescribed by leaders among medical men who have proved its undoubted worth through years of cheerful and helpful experience. Phillips gave the earliest Milk of Magnesia to the world of relief and the home of Phillips' at Glenbrook is one of the show-spots in Connecticut. The water used is so absolutely pure that it is possible to make and sustain the claim that Phillips' Milk of Magnesia is 100 per cent effective. The utter lack of carbonates prevents the formation of any gas. Phillips' Milk of Magnesia is essentially antacid and mildly laxative. It is counted as one of the most valuable of the agencies for health that are at the command of the medical fraternity. The slogan of usefulness of Phillips' Milk of Magnesia proclaims its mission as one "to restore the sick to health and keeping well people well."

## Pond's Extract

POND'S EXTRACT CO.  
New York and London

For lumbago and back pain generally, a very pleasant as well as dependable means of relief is to be found in the application of a thick compress, well wet with Pond's Extract, over or next to which a hot-water bottle or hot plate is kept with the object of maintaining moist heat for several hours. The benefits are quickly shown by removal of pain and soreness, the reduction of swelling and an early restoration of the injured muscle to a normal condition.

## Lumbago

## INTRAVENOUS SOLUTIONS

The Intravenous Products Co., of America, Inc., of 239 Fourth Ave., New York City, realize their responsibility in preparing intravenous solutions for the medical profession, and they have adopted the slogan "The best is none too good for intravenous use," and nothing that goes out of their laboratory falls one whit below this standard. They have labeled their products by the trademark "Endo," which identifies all their solutions. It is, of course, the physician's office to say what he will prescribe for any disease, and it is only for them to say that they will prepare the drug properly for intravenous use and will do so in a manner that will meet the commendation of the physician.

They call attention to the large number of Endo solutions they can furnish with the guarantee that all of them reach the high standard of their products.

## LABORATORY DIAGNOSIS

The Beebe Laboratories of St. Paul desire to impress upon physicians that they are prepared to render a service that is cheaper, often much better, and generally briefer than can be given, as a rule, by one's private laboratory, and is at least equally efficient in all these respects.

## ENDO INTRAVENOUS SOLUTIONS

*"The best is none too good for intravenous use"*

In Gout  
Arthritis  
Sciatica  
Rheumatism  
and other  
Streptococci  
Infections

Direct Action  
Effective Results

## ENDOSAL

usually relieves pain in rheumatism after first injection, stiffness begins to leave after the second injection and ordinary cases are dismissed after the sixth injection.

Each 20 mil. ampoule contains Sodium Iodide, Sodium Salicylate and Colchicine in a sterile isotonic solution. Sold in boxes of 6, 25 and 100 ampoules.

*Write for booklet "Direct Medication"*

**Intravenous Products Co. of America Inc.**  
239 Fourth Ave., New York



## LINCOLN HOSPITAL

Founded 1920  
Building Fire-Proof.

The hospital has been rated and standardized by the American College of Surgeons. It is modern in every respect, and equipped for the comfort and safety of its patient.

The Hospital maintains a medical service, scientifically co-ordinated. This Service covers Medicine, Surgery, Obstetrics, Pediatrics, and all of the specialties.

The Hospital conducts a Training-School for Nurses. The course of training covers three years and conforms to standardized requirements for entrance and graduation. Additional training is offered to young women preparing for collateral occupations, such as Surgical Supervising, X-Ray, Physiotherapy, and Laboratory.

## THE LINCOLN HOSPITAL

421 South Lincoln Street

Aberdeen, South Dakota

The Beebe Laboratories desire to correspond with any physician who is not familiar with the diagnostic service the public laboratory can furnish or with the very reasonable prices the Beebe Laboratories make.

A personal call from every physician is invited at all times. Their new price lists are now ready for distribution.

#### LILLY BULLETIN NO. 56

Bulletin No. 56, the sixth of a series of booklets containing information on Lilly specialties calculated to be of interest to every physician, has just been placed in the outgoing mail according to a report from Indianapolis.

These mailings have been very well received by medical men, and, despite the fact that the average doctor's mail is heavily padded with advertising literature, there is ample evidence, according to this Indianapolis house, that the character of Lilly literature and information is of such a nature that it commands attention and interest.

The Lilly Laboratories, through research activities, have made great strides in the past few years and any announcement of additions to the Lilly Line are certain to attract attention and create interest.

Bulletin No. 56 embraces comprehensive information on the following, a half dozen Lilly products that are of special interest.

If, by chance some of our readers have not received a copy of Bulletin No. 56 or bulletins previously mailed, they may address a request to Eli Lilly and Company, Indianapolis.

#### *For Professional Service*

### Mead's Nurses Registry

MARION A. MEAD, M.D., Registrar

871 Curtis Hotel, Minneapolis, Minn.

Thirty years experience in Nursing Service in the City of Minneapolis

Registered, Graduates and Practical Nurses  
Hospital and Office Positions Filled

Telephone—Geneva 8434

If no answer call Atlantic 4400, Curtis Hotel  
Minneapolis, Minn.

DRINK

**Glix**  
ALWAYS GOOD

**BARLEY MALT and HOPS**

Brewed, fermented and fully aged like the old-time product.

It's Most Delicious

For Home Delivery Phone Cherry 3631

**THE GLUEK COMPANY, Minneapolis**



*Bank Here*

**We Pay 2½%  
Interest on  
Checking Accounts**



**THE MINNESOTA  
LOAN & TRUST CO**  
405 Marquette Ave

**Since 1883**

**ERGOAPIOL**  
(Smith)

For  
**AMENORRHEA  
DYSMENORRHEA  
MENORRHAGIA  
METRORRHAGIA  
ETC.**

ERGOAPIOL (Smith) is supplied only in packages containing twenty capsules.

DOSE: One to two capsules three or four times a day. < < <

SAMPLES and LITERATURE  
SENT ON REQUEST.

**MARTIN H. SMITH COMPANY, New York, N.Y., U.S.A.**



## When You Most Need



## There Is No Time To Wait

—To secure it from your regular supply house or dealer. It may be an accident case where an immediate application of wet dressing is indicated. It may be an infected case where hot applications indicate a covering of Impervious CILKLOID to hold in the heat and prolong the efficiency of the application.

If it is a burn, you will want either the Impervious form to cover the wound to exclude the air, or the Perforated form to admit the air and prevent the dressing from adhering to the wound.

For all granulating wounds, you will want the Perforated CILKLOID for direct dressing. The granulations will use it as a foundation to build on, but will not stick to it when it is removed. This saves your time in changing dressings and eliminates shock and pain caused by removing dressings that stick.

## Does Not Deteriorate

Age or atmospheric conditions do not affect CILKLOID. A roll of each, the Perforated and Impervious forms, secured now from your regular supply house, will always be ready when it is needed and will last until entirely used up.

### IMPERVIOUS FORM

"Standard" (Single Weight) 9 in. x 4 yds. ....\$1.00  
 "Hospital" (Single Weight) 18 in. x 4 yds. .... 2.00  
 "Standard Heavy" (Double Wgt.) 9 in. x 4 yds. 1.50  
 "Hospital Heavy" (Double Wgt.) 18 in. x 4 yds. 2.50

### PERFORATED FORM

"Standard Perforate" 9 in. x 4 yds. ....\$1.75  
 "Hospital Perforate" 18 in. x 4 yds. .... 3.00

.....  
*Sample on Request*  
 .....

## The Cilkloid Company

508 S. 3rd Ave.      Marshalltown, Iowa

## PUBLISHER'S DEPARTMENT

### MISTOL

Mistol for the nose and throat is offered the profession by the Nujol Laboratories of the Standard Oil Co., and its highest recommendation is its formula with the drop method of application. It is composed of menthol, eucalyptol, and camphor combined in proportions recommended by leading nose and throat specialists.

The Nujol Laboratories put these ingredients in a specially prepared petrolatum base which keeps them in contact with the mucous membrane for a considerable time.

Mistol is recommended, or, rather, recommends itself for all simple nose and throat inflammations. It is put up in a two-ounce bottle in a wrapper, and the bottle and dropper are enclosed in a carton.

### GASTRON

The house of Fairchild Bros. & Foster is known to every man of mature years in the practice of medicine as research workers in the gastric extracts, first and for many years in the form of pepsin. Their continuous work for fifty years in this one line has culminated in the production of "Gastron," which is extracted from the entire fresh stomach membranes, peptic and pyloric.

Gastron has wide application in the gastric disorders, and its literature is both interesting and informing. It will be promptly supplied, with samples of Gastron, upon application to the well-known house of Fairchild Bros. & Foster, N. Y. City.

### CILKLOID

There are few things used by both surgeons and general practitioners that give more general satisfaction than the dressing known as Cilkloid, which is, indeed, a well-nigh perfect dressing for wounds of all kinds and in all conditions. Cilkloid is equally efficacious, in its different forms, as a wet or a dry dressing, perforated or solid.

Cilkloid will not deteriorate with age or because of changing atmospheric conditions. A sample of this admirable dressing will be sent to any physician upon request, and will make a friend at sight of any man who has not seen or used it. For samples address The Cilkloid Company, Marshalltown, Iowa.

### THE PHYSICIANS AND HOSPITAL SUPPLY CO., INC.

On the second cover page of this issue will be found an announcement of interest to every medical man in the Northwest. On the upper half of the page is a picture of the new and very attractive office and display rooms of the company recently moved into, and in the margins are the names of the departments, nearly twenty, into which the business of the house is divided.

On the lower half of the page is a picture of the Company's "Minneso Table," which has eleven special features, the last of which is its low price. This table is really handsome, and its simple lines will make it "at home" in any physician's office.

This Minneapolis Company has made splendid progress in the short time it has been under the present management backed by sufficient capital to do its own manufacturing in a number of lines, such as enamel ware, furniture, etc., made in its own factories.

# Reduced Prices *Super-Concentrated* **DIPHTHERIA ANTITOXIN**

*Less Bulk—Less Pain—Quicker Results*

Now costs no more than other antitoxins.  
Welcome news. It means you can use  
**SUPER-CONCENTRATED ANTITOXIN** in all  
your diphtheria cases at no greater cost

**I**NCREASED production, necessitated by the wide preference of the medical profession, and improved methods enable us now to offer **SUPER-CONCENTRATED ANTITOXIN** at the same prices as ordinary antitoxins.

The Mulford Perfected Antitoxin Syringe is ready for instant use. The non-stick plunger, the non-slip finger rest, and the glass-incased sterile needle (an exclusive, patented Mulford feature) make it an ideal injecting device.

## ADVANTAGES

*Super-concentration  
Isotonicity with the blood  
Small volume  
Low protein content  
Quick absorption  
Absence of turbidity  
Stability  
Uniformity*

Give your diphtheria patients the benefit of **SUPER-CONCENTRATED ANTITOXIN**.

*Now costs no more  
than other antitoxins*

Sold by Leading Druggists and  
Biological Distributors  
everywhere.

**H. K. MULFORD CO.**

Philadelphia, U. S. A.



74861

# Mulford

THE PIONEER BIOLOGICAL LABORATORIES

## THE WALMAN OPTICAL CO

The Walman Optical Co. of Minneapolis and Grand Forks (N. D.) are manufacturing and dispensing opticians; also specialize in the line of optical instruments and supplies required by physicians, and they find that they can be of real service in this field. Many physicians have found that they can greatly increase their incomes by doing this work, especially in the country; and the Walman Co. invite physicians to correspond with them or to call at either of their houses and talk with them about this service.

For further information address The Walman Optical Co., Minneapolis, Minn., or Grand Forks, N. D.

## THE POTTENGER SANATORIUM

The Pottenger Sanatorium, of Monrovia, California, a city in the foot hills of the Sierra Madre Mountains near Los Angeles, stands for the most advanced work known to the profession in the treatment of the lungs and throat, not tuberculosis alone; and all physicians visiting California should make a call upon the staff of the Pottenger institution, where they will receive a cordial welcome and be given an opportunity to see the attractive housing and situation of this justly famous home for the care and treatment of patients with lung and throat diseases.

The Drs. Pottenger are men of international reputation.

The Sanatorium maintains an office at Los Angeles (1045-6-7, Title Insurance Bldg.)

## Oldest - Largest - Safest

is the record of Mutual Savings Banks in this country.

The oldest—the Philadelphia Savings Fund Society—was organized in 1816.

The largest savings bank in the world is the Emigrant Industrial Savings Bank in New York—a Mutual Bank.

No Mutual Bank in this country has failed in 75 years.

This is the only Mutual Savings Bank in Minneapolis and is the largest savings bank in the Northwest.

## Farmers & Mechanics Savings Bank

115 S. 4th St.

Minneapolis



## THE MURPHY RADIUM SERVICE

The rental of radium has now become a common practice, and, it may be said, the practice has given general satisfaction. Dr. I. J. Murphy, of Minneapolis, has been engaged for several years in conducting clinical laboratories and supplying radium rental service, and he believes the work has given entire satisfaction to all physicians engaging the service of himself and assistants.

Dr. Murphy invites correspondence with physicians or, preferably, personal calls from them.

## SHARP & SMITH—SURGICAL SUPPLIES

Messrs. Sharp & Smith, of 55 East Lake St., Chicago, are among the half dozen, perhaps, oldest surgical supply houses in this country, and they have maintained a reputation for honorable dealing that inspires a degree of confidence in their patrons that is an assurance to the younger professional men who may not have dealt with them that they are wholly dependable, which is an admirable quality. Perhaps no other house in this line of work has put upon the market surgical instruments and appliances of all kinds desired by surgical men of the highest standing in the profession.

In addition to manufacturing, the house imports instruments and supplies on a large scale.

Their catalogue is filled with a descriptive list of medical, surgical, and hospital supplies that cannot fail to interest everyone engaged in the practice of medicine or surgery.



THE 1927 edition of this book is yours for the asking and you will find it an invaluable aid in planning your garden and in the successful growing of Vegetables and Flowers.

It lists everything worth while in Seeds, Plants and Bulbs, with numerous illustrations and full cultural information.

HENRY A. DREER

1306 Spring Garden St. Philadelphia, Pa.

## THOUSANDS OF CASE REPORTS DEMONSTRATE

# CAPROKOL

(HEXYLRESORCINOL S & D.)

IS INVALUABLE IN

PYELITIS—Acute or chronic.

CYSTITIS—Acute or chronic.

URETHRITIS—Specific or non-specific.

PHOPHYLAXIS—Before and after instrumentation or operation.

SECONDARY INFECTIONS—Associated with prostatitis or distant foci of infection.

APPROXIMATELY FORTY-FIVE TIMES THE GERMICIDAL POWER OF PHENOL AND NON-TOXIC IN THERAPEUTIC DOSES.

EASE AND COMFORT OF PATIENT QUICKLY ESTABLISHED

For Adults, S. E. Capsules.  $\mathcal{R}$  Boxes of 25, 50 and 100.

For Children Solution (in olive oil).  $\mathcal{R}$  Vials of 4 fld. ozs.

PERFECTLY DEPENDABLE -- CLINICALLY EFFECTIVE

Note:—The efficacy of CAPROKOL (Hexylresorcinol, S. & D.) depends to some extent upon its ability to decrease the surface tension of the urine. As diuretic drugs including Sodium Bicarbonate and large quantities of fluids increase the surface tension of the urine they should not be employed during treatment with CAPROKOL (Hexylresorcinol, S. & D.)

## SHARP & DOHME

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## GUDE'S PEPTO-MANGAN

Used for a third of a century tells the story of the value of Gude's Pepto-Mangan to the medical profession. It is not only a long time, but it is a satisfying use, and a use by men of the highest standing in the medical profession. It satisfies because it furnishes the elements called for by chlorotic patients, such as the general practitioner meets every day.

The symptoms of such a patient are unmistakable, and so are the effects of such a tonic as Gude's whose basis is the peptones, manganese, and iron, which are combined in an elegant form in Pepto-Mangan.

## THE WAUKESHA SPRINGS SANITARIUM

The Waukesha Sanitarium occupies a beautiful building with attractive surroundings in one of the finest health resorts in this country, namely, Waukesha, Wis. The building is absolutely fire-proof and is equipped with every convenience and appliance that can add to the comfort of its patients.

This sanitarium is devoted to the care and treatment of nervous cases, and Dr. Byron M. Caples is its Medical Director, assisted by Drs. Floyd W. Alpin and L. H. Prince.

Dr. Caples is an expert of recognized standing among the neurologists of the country and his associated physicians make the staff of this sanitarium a very strong one.

Dr. Caples will be pleased to give any physician the fullest information about his institution and its work that may be desired. For such information address Dr. Byron M. Caples, Medical Director, Waukesha Springs Sanitarium, Waukesha, Wis.

Telephone: Atlantic 3253  
Twenty-four hour service

681 Curtis Hotel  
MINNEAPOLIS, MINN.

## NURSES CENTRAL REGISTRY

OF THE

THIRD DISTRICT MINN. STATE  
REGISTERED NURSES ASSOCIATION

REGISTERED GRADUATES ONLY

Private duty  
Hourly nursing

Institutional and  
Office Positions

**Note:**—This Registry was formerly the Hennepin County Nurses' Registry. In 1919, when the American Nurses' Association reorganized, Minnesota was divided into six districts, Minneapolis being the headquarters for Third District. This is the official Registry for registered nurses in Minneapolis, and is managed and maintained by the Third District Nurses' Association.

## Pond's Extract

POND'S EXTRACT CO.  
New York and London

For lumbago and back pain generally, a very pleasant as well as dependable means of relief is to be found in the application of a thick compress, well wet with Pond's Extract, over or next to which a hot-water bottle or hot plate is kept with the object of maintaining moist heat for several hours.

The benefits are quickly shown by removal of pain and soreness, the reduction of swelling and an early restoration of the injured muscle to a normal condition.

## Lumbago

# ANIMASA

Registered Trade Mark

## IN ARTERIOSCLEROSIS

Animasa is a treatment directed at the cause. An organic remedy used with successful clinical results both here and in Europe. Also indicated in Hypertension and as a prophylactic. Write for facts you should know.

Organo Therapeutic Corp.  
109 W. 57th St., New York

## POST GRADUATE COURSES

IN ALL BRANCHES FOR  
PHYSICIANS AND SURGEONS

*Laboratory and X-Ray Training for Physicians and Technicians*

Graded Courses in EYE, EAR, NOSE AND THROAT

*For further information address*

POST GRADUATE HOSPITAL AND MEDICAL SCHOOL, 2400 S. Dearborn St., Chicago, Ill.



## THE ACME-INTERNATIONAL X-RAY APPARATUS FOR EVERY PURPOSE

The Pengelly X-Ray Company, of Minneapolis, present on another page of this issue of THE JOURNAL-LANCET illustrations of four of their Precision Model Tables which will interest every person engaged in radiographic and fluoroscopic work.

These models are furnished in many combinations so as to meet the needs of every individual, clinic, or hospital, regardless of the amount of work to be done by individual, clinic, or hospital.

The Pengelly Company will supply, upon application, literature on X-ray and physical therapy apparatus that covers these subjects with great clearness and thoroughness. They may be addressed at 220 La Salle Building, Minneapolis.

## ACIDOPHILUS EXPERT JOINS PHILADELPHIA HOUSE

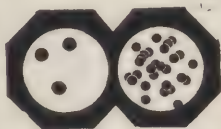
Dr. H. A. Cheplin a distinguished scientist, has recently joined the staff of the Mulford Biological Laboratories, where he will take over the control and production of Mulford Acidophilus Blocks, and con-

tinue his research work on this important and beneficial organism.

Dr. Cheplin comes to the Mulford Laboratories from Syracuse University, where he has filled since 1921 the post of Associate Professor of Bacteriology.

Dr. Cheplin's interest in the science of bacteriology began during his undergraduate work in Syracuse University and was continued at Yale University, where his energetic pursuit of postgraduate studies soon earned him the Seessel Fellowship in Bacteriology, and, in due course, the degree of Doctor of Philosophy. His interest in the lactobacilli, and B. acidophilus in particular, brought him into close working relations with Dr. Leo Rettger of Yale. The result of their joint efforts is found in their well-known book on "The Transformation of the Intestinal Flora, with Special Reference to the Implantation of Bacillus Acidophilus," published in 1921.

When called to the Associate Professorship at Syracuse University, in 1921, Dr. Cheplin continued his interest in acidophilus therapy, and, in co-operation with a number of local physicians, has contributed several papers on the clinical aspects and practical application of acidophilus therapy. The



## DESCHIENS' SYRUP

Of Hemoglobin

Your patients with anemic tendencies will benefit by taking Deschiens' Syrup. It is a drugless treatment, an excellent example of opotherapy. Prescribed a tablespoonful in water before or after each of the two principal meals.

Samples and Literature

GEORGE J. WALLAU, Inc.

6 Cliff St., New York, N. Y.

## ENDOSAL

*"The best is none too good for intravenous use"*

## ENDOSAL

In Gout  
Arthritis  
Sciatica  
Rheumatism  
and other  
Streptococic  
Infections

Direct Action  
Effective Results

usually relieves pain in rheumatism after first injection, stiffness begins to leave after the second injection and ordinary cases are dismissed after the sixth injection.

Each 20 mil. ampoule contains Sodium Iodide, Sodium Salicylate and Colchicine in a sterile isotonic solution. Sold in boxes of 6, 25 and 100 ampoules.

*Write for booklet "Direct Medication"*

**Intravenous Products Co. of America Inc.**  
239 Fourth Ave., New York



## LINCOLN HOSPITAL

Founded 1920  
Building Fire-Proof.

The hospital has been rated and standardized by the American College of Surgeons. It is modern in every respect, and equipped for the comfort and safety of its patient.

The Hospital maintains a medical service, scientifically co-ordinated. This Service covers Medicine, Surgery, Obstetrics, Pediatrics, and all of the specialties.

The Hospital conducts a Training-School for Nurses. The course of training covers three years and conforms to standardized requirements for entrance and graduation. Additional training is offered to young women preparing for collateral occupations, such as Surgical Supervising, X-Ray, Physiotherapy, and Laboratory.

## THE LINCOLN HOSPITAL

421 South Lincoln Street

Aberdeen, South Dakota

extent of his work is evident in the fact that he is the author, or joint author, of some thirty-two papers, all relating to acidophilus—the outstanding ones being published in the Proceedings of the National Academy of Sciences, the *Boston Medical and Surgical Journal*, the *New York Medical Journal*, the *Journal of the A. M. A.*, and *Archives of Internal Medicine*.

Dr. Cheplin claims to be the first one to have fed acidophilus culture by the mouth. Of course, a great deal of work had been done previously in a study of the intestinal flora and the changes effected therein by different diets. The influence of lactic acid, lactose, milk, Bulgarian Bacillus cultures, and the like, has been studied by many different workers. It was the work of Rettger and his associates which

first demonstrated the influence of certain dietary factors—milk, lactose, etc.—in bringing about a preponderance of *B. acidophilus*. Cheplin, working at the time with Rettger, was the first to follow up these observations by actually feeding acidophilus culture by mouth.

During the World War, Dr. Cheplin was in the Medical Corps and filled assignments at various camp hospitals and at the Yale Army Laboratory School. Aside from this interruption of the War years, his interest in the acidophilus and acidophilus therapy has been continuous and zealous. It has placed him in the front rank of recognized authorities, and augurs well for the continued improvement and ever-extending use of Mulford Acidophilus Blocks.

## ELECTROLYSIS FOR SUPERFLUOUS HAIR

The only permanent cure known for superfluous hair, moles, warts, etc. I positively guarantee my work to be permanent. No pain or scars. I use Multiple Electrolysis (many needles,) the quickest, cheapest and most reliable of all electric needle methods. No pupils employed. *Tel. Atlantic 7043.*

Special attention given to cases referred to me by physicians.

**A. B. WILLISON**

SUCCESSOR TO

ELLA LOUISE KELLER

343 LOEB ARCADE, MINNEAPOLIS

NEW YORK

CHICAGO

*For Professional Service*

## Mead's Nurses Registry

MARION A. MEAD, M.D., Registrar  
871 Curtis Hotel, Minneapolis, Minn.

Thirty years experience in Nursing Service in the  
City of Minneapolis

Registered, Graduates and Practical Nurses  
Hospital and Office Positions Filled

Telephone—Geneva 8434

If no answer call Atlantic 4400, Curtis Hotel  
Minneapolis, Minn.

**DRINK**



**Glax**  
ALWAYS GOOD

**BARLEY MALT and HOPS**  
Brewed, fermented and fully aged like the  
old-time product.  
*It's Most Delicious*  
For Home Delivery Phone Cherry 3631  
**THE GLUEK COMPANY, Minneapolis**

**ERGOAPIOL**  
(Smith)

For  
**AMENORRHEA  
DYSMENORRHEA  
MENORRHAGIA  
METRORRHAGIA  
ETC.**

ERGOAPIOL (Smith) is supplied only in  
packages containing twenty capsules.

DOSE: One to two capsules three  
or four times a day. < < <

SAMPLES and LITERATURE  
SENT ON REQUEST.

MARTIN H. SMITH COMPANY, New York, N.Y., U.S.A.





## Recommend Mistol for the Nose and Throat

*M*ISTOL has proven especially efficacious in coughs and colds, simple, congestive and catarrhal rhinitis, hoarseness, bronchitis and laryngitis.

Mistol consists of menthol, eucalyptol and camphor carefully combined in proportions recommended by leading nose and throat specialists. A specially prepared petroleum base keeps the soothing, healing ingredients in direct contact with the mucous membrane for a considerable length of time. Moreover, it prevents it being easily washed away by the natural secretions.

Mistol and the Mistol Dropper are a real advance in nose and throat therapy. With head tilted back, the patient should let Mistol drop into each nostril until it is felt to be running into the back of the throat. Unlike douches, Mistol avoids any possibility of sinus trouble. It is manifestly superior to salves which do not reach all parts the mucous membrane.

Sold in original sealed cartons containing a two ounce bottle and Mistol Dropper.

# Mistol

REG. U.S. PAT. OFF.

Made by NUJOL LABORATORIES, STANDARD OIL CO. (New Jersey)

## PUBLISHER'S DEPARTMENT

### The Washington Meeting of the A. M. A.

For the meeting of the A. M. A. at Washington, D. C., opening on May 16th, the Chicago Milwaukee and St. Paul Railway will operate special sleepers on the "Pioneer Limited" to Chicago May 14th and 15th, connecting with the Special trains of the Illinois State Medical Association leaving Chicago via the Pennsylvania Lines, at 1:00 P. M., May 15th and 16th.

The Pioneer Limited leaves Minneapolis at 8:00 P. M. and St. Paul at 8:40 P. M., arriving in Chicago at 8:35 A. M. Requests for reservations will be given prompt attention, and space will be secured through to Washington.

A special rate of a fare and one-half for the round trip has been made for this occasion. Certificates covering this rate should be secured from your state secretary, and presented to the railroad agent when your ticket is purchased. Be sure your ticket is routed via "The Milwaukee" to Chicago and via the "Pennsylvania" Chicago to Washington.

Inquiries are solicited and will receive immediate attention by the City Passenger Agent, of the railroad at Minneapolis or St. Paul.

### GARDEN AND FLOWER SEEDS

After using the flower and garden seeds of Henry A. Dreer, of Philadelphia, for fifteen or twenty years the writer can say he never saw finer flowers and vegetables than those grown in his own garden from Dreer's seeds, and his neighbors confirm this statement by their words of praise of such flowers

and vegetables. In no instance in our experience has there been a single disappointment in these seeds.

It is a pleasure to have such an experience and equally so to pass it on to one's neighbor. For a copy of Dreer's Garden Book, address a postal card to Henry A. Dreer, Philadelphia, Pa., with a request for his 1927 book.

### SILVER COMPOUNDS

Silver nitrate first demonstrated the bactericidal property of silver. This was, obviously, an invitation to the chemist to devise a silver compound that could be used freely in solution, as silver nitrate could not. Especially desired was a silver salt that would kill the gonococcus without irritating the urethra, for it was soon learned that silver was especially efficacious as a gonococcide. To the majority of silver compounds offered from time to time one of two objections is made by the patient: first, they hurt; second, they left dark stains on the linen.

Now comes a comparatively new silver iodide preparation—one that actually protects the silver and the iodine from the action of light, and yet leaves its activity as a germicide apparently unimpaired. Neo-Silvol, as this product is called, is said to be 20 times as active as pure carbolic acid (in other words, to have a phenol coefficient of 20) in contact with the gonococcus, and at the same time to be notably bland in its effect upon the inflamed tissues and free from the dark-staining tendency that characterizes other silver preparations.

Further particulars are offered to the readers of the advertisement on Neo-Silvol which appears on another page of this issue.

## THOUSANDS OF CASE REPORTS DEMONSTRATE

# CAPROKOL

(HEXYLRESORCINOL S & D.)

IS INVALUABLE IN

PYELITIS—Acute or chronic.

CYSTITIS—Acute or chronic.

URETHRITIS—Specific or non-specific.

PHOPHYLAXIS—Before and after instrumentation or operation.

SECONDARY INFECTIONS—Associated with prostatitis or distant foci of infection.

APPROXIMATELY FORTY-FIVE TIMES THE GERMICIDAL POWER OF PHENOL AND NON-TOXIC IN THERAPEUTIC DOSES.

EASE AND COMFORT OF PATIENT QUICKLY ESTABLISHED

For Adults, S. E. Capsules.  $\mathcal{R}$  Boxes of 25, 50 and 100.

For Children Solution (in olive oil).  $\mathcal{R}$  Vials of 4 fld. ozs.

PERFECTLY DEPENDABLE -- CLINICALLY EFFECTIVE

Note:—The efficacy of CAPROKOL (Hexylresorcinol, S. & D.) depends to some extent upon its ability to decrease the surface tension of the urine. As diuretic drugs including Sodium Bicarbonate and large quantities of fluids increase the surface tension of the urine they should not be employed during treatment with CAPROKOL (Hexylresorcinol, S. & D.)

## SHARP & DOHME

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## A TONIC OF KNOWN RELIABILITY

Therapeutic dependability—the accomplishment of definite physiologic results—has won for Gray's Glycerine Tonic Comp. its recognized place in the treatment of debility, functional nervous diseases and convalescence.

When other tonics fail or are contraindicated for one reason or another, Gray's Glycerine Tonic Comp. may be freely used with the constant assurance that its effects will ever be restorative and re-constructive—never harmful or injurious.

## EPHEDRINE SULPHATE, LILLY

Mahuang, a drug known and used in the practice of medicine in China for more than 5,000 years, has recently come into considerable prominence due to the pharmacological action of its active principle, offered by Eli Lilly and Company as Ephedrine Sulphate. So great has been the demand for this product and so scarce has been the supply of the crude material that Eli Lilly and Company have only recently been able to release it for the market.

The chemical composition of ephedrine is said to be closely allied to that of epinephrine. There are, however, important differences. The physiological dose of epinephrine is measured in tenths of milligrams, that of ephedrine is many times as great and much more persistent but not so intense. The drug is just as effective when introduced orally as by hypodermic injection. The action begins

about the same time after administration. Ephedrine solutions are stable indefinitely even on exposure to light and air and they are not decomposed by boiling.

The findings suggest clinical importance in asthma, serum reactions and urticaria and in the management of certain nasal congestive conditions such as hypertrophic rhinitis and hay fever. There is satisfying evidence that Ephedrine Sulphate, Lilly, is an important addition to our means of relieving asthma. In a series of cases the effect appeared in about thirty minutes and lasted from four to twenty-four hours.

Ephedrine, Lilly, is offered in the sulphate form. Most alkaloids can be more highly purified in this salt; as, for example, codeine, morphine, quinine. K. K. Chen, responsible for the status of this alkaloid and whom subsequent investigators have followed, reported in the J. A. M. A., complaints of the stinging sensation from patients taking the hydrochloride which was not noticed following the administration of the sulphate despite the fact that laboratory findings show little difference between the physiological and therapeutic effect of the two salts.

Ephedrine Sulphate, Lilly, may be given orally, hypodermically, or applied topically. Oral administration is distinctly in its favor. This product is supplied in Pulvules (filled capsules) of two sizes, in ampoules and in 3% solutions, through the drug trade.

## Fifty Times Tested

More and more the modern clinician appreciates the profound physiologic importance of calcium and phosphorus. More and more, too, he is insisting that these elements be administered in their most absorbable form and in a state of exceeding purity.

## ESKAY'S NEURO PHOSPHATES

**SMITH, KLINE  
& FRENCH CO.**

105-115 North 5th Street  
Philadelphia, Pa.  
Established 1841

*Manufacturers of  
Eskay's Food  
Eskay's Suxiphen*

contains calcium and phosphorus as a calcium acid glycerophosphate, their most soluble and absorbable form. Moreover, its ingredients are subjected to 50 tests for identity, purity, quality and strength, and every lot of the preparation is standardized to insure absolute uniformity.

## A Convenience for the Busy Doctor

WHY bother about your insurance premiums?

Open an Insurance Savings Account with us and have your secretary mail us a check each month for one-twelfth of the annual premiums. We will do the rest.

*Window No. 2*

## Farmers & Mechanics Savings Bank

115 S. 4th St.

Minneapolis

## THE NORTHWESTERN HOSPITAL OF MINNEAPOLIS

As our readers will recall, several months ago the Northwestern Hospital of this city opened a fine large addition to its building, making it practically a complete unit, with every improvement in hospital construction and equipment known to hospital architects and hospital managers. When hospitals of this character, through the generosity of the public, can keep up with the advancement in the needs of hospitals, the work of the medical profession is facilitated to a degree that is encouraging.

This aid to the public finds its highest appreciation in the reciprocal aid of the medical profession in the work of this and like hospitals.

The Northwestern Hospital has a staff drawn from the profession of Minneapolis which can hardly be excelled in any other city of a half million people in this country. It is a hospital managed by women who have mastered the art of perfect co-operation with physicians and surgeons.

The nurses' training-school of the Northwestern Hospital opens a splendid field of work for young women who desire to become professional nurses; and its diploma is evidence of thorough preparation and efficiency of its holder. Many of the leading public and private hospitals of the entire Northwest have executive heads who are graduates of this training-school.

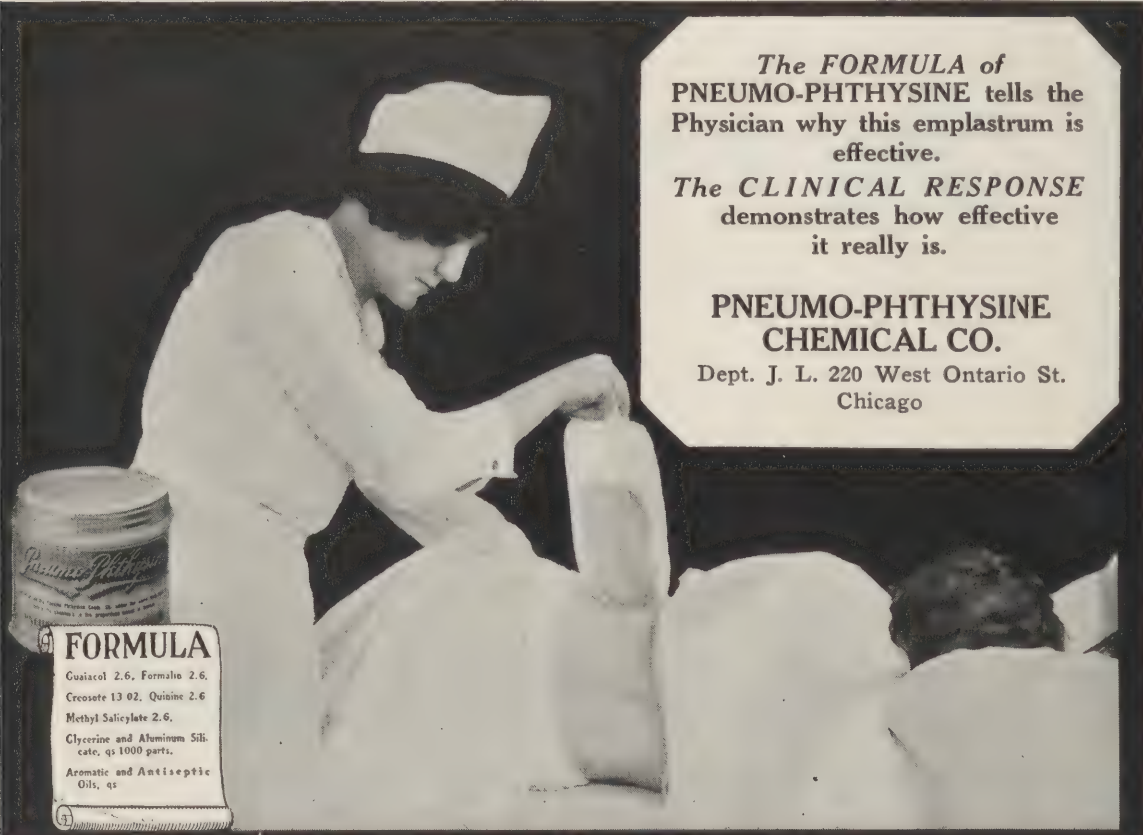
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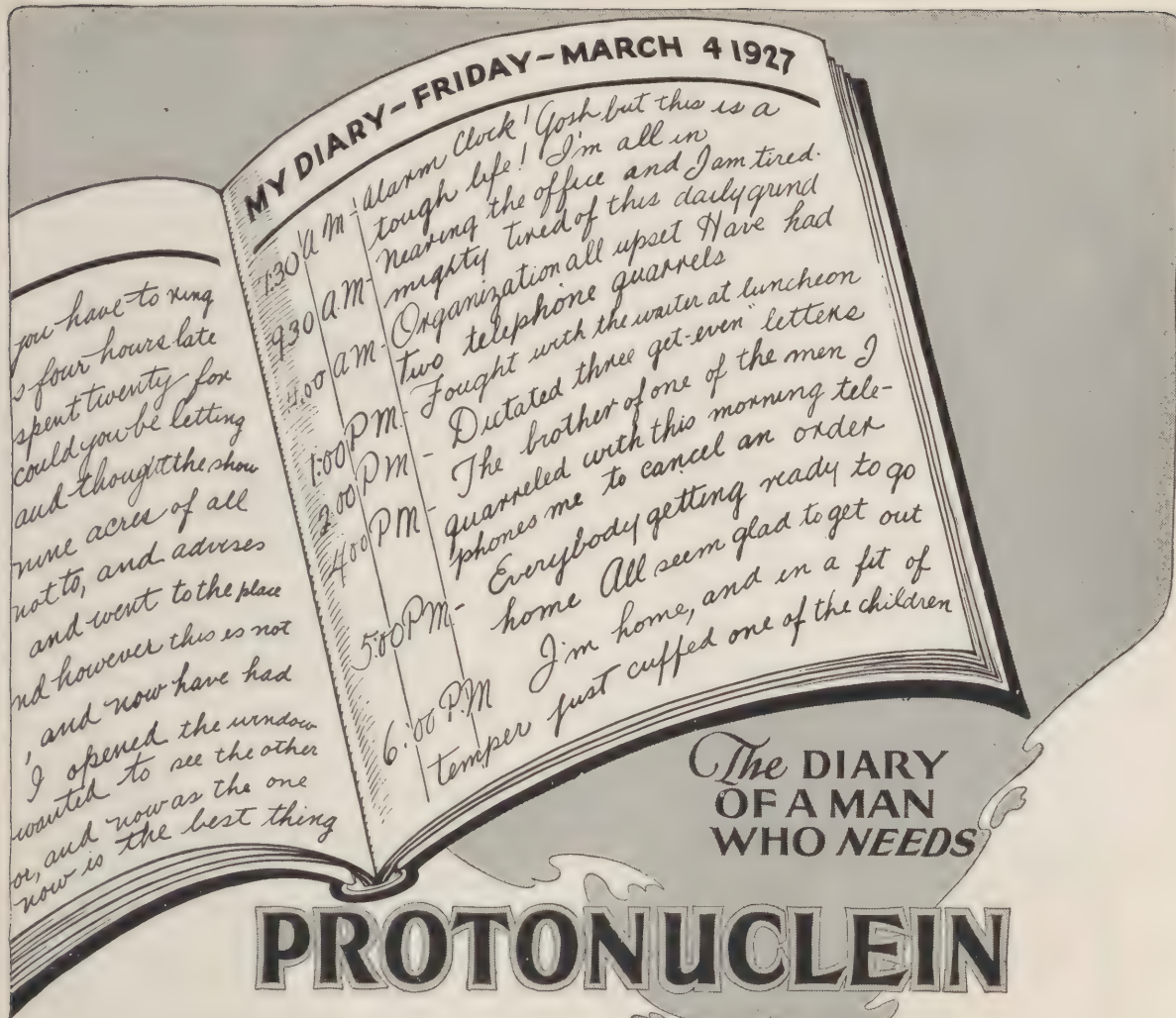
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It often shows that after pulling through a hard winter an active person gravitates into a state of mental and physical debility. The endocrine glands go askew. Nature cries for a glandular product which will stabilize the metabolism.

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It is not necessary to enumerate what drugs, instruments, apparatus, or hospital supplies and furnishings this house carries in stock; it is enough to say that they carry practically everything used in a physician's office or in a hospital, and everything they sell carries the guaranty of the house's name, which is a guaranty of fair dealing.

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Pneumo-Phthysine is an emplastrum containing medicaments whose names appear upon every container in which Pneumo-Phthysine is put up and offered to physicians. The claims made for Pneumo-Phthysine are that the medicaments are absorbed immediately upon application and that they will reduce fever or inflammation when other measures fail. Thus the physician who examines the formula knows what results to expect from its application, and a single test of it is all that is required to confirm the impression given by the formula. It is

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Every doctor knows that this is true, and that it is true only when the glands are properly prepared for medical use.

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There is a guarantee to the physician in the use of endocrine products when they are prepared by

such a firm as the G. W. Carnrick Co., of 421 Canal Street, New York City—the oldest specializing firm preparing these glands for medical use. This company has adopted the slogan "Dependable Gland Products." Their right to use such a slogan is recognized, for they steadily improve their technique and always observe every caution in securing potency, constancy and standardization.

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usually relieves pain in rheumatism after first injection, stiffness begins to leave after the second injection and ordinary cases are dismissed after the sixth injection.

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The hospital has been rated and standardized by the American College of Surgeons. It is modern in every respect, and equipped for the comfort and safety of its patient.

The Hospital maintains a medical service, scientifically co-ordinated. This Service covers Medicine, Surgery, Obstetrics, Pediatrics, and all of the specialties.

The Hospital conducts a Training-School for Nurses. The course of training covers three years and conforms to standardized requirements for entrance and graduation. Additional training is offered to young women preparing for collateral occupations, such as Surgical Supervising, X-Ray, Physiotherapy, and Laboratory.

### **THE LINCOLN HOSPITAL**

421 South Lincoln Street

Aberdeen, South Dakota

## UNCOMMON CLAY

The Count was an inveterate smoker. His cigars were made from tobacco from the Vuelta Abajo district in Cuba, and he always saw to it that the fiber was long. When he lighted a Perfecto he did so with the greatest care and smoked it so evenly that the ash stood by itself when the cigar was two-thirds smoked. A rather foolish, foppish person his fellow scientists considered him, although they were willing to admit that there was none who knew more about rare earths and uncommon clays than did he.

One day the Count, perhaps we had better say Carl Auer, was sitting in his laboratory balancing the ash of a long cigar when an idea occurred to him—Why could he not devise a scheme for making a cone of ashes stand alone so that he could heat it until it glowed with a white heat? Just at that time he was experimenting with white clays and rare earths and had noticed that after some of those substances had been brought to a white heat they gave out a strong light. So he made a round cotton wick ending in a cone top, impregnated it with a mixture of thorium and cerium (both rare earths) and lighted it. The cotton burned up, and the earths stood in a cone, which looked not unlike the clinging ash of one of his long cigars. The more he heated the cone the whiter and hotter it grew, and thus Auer invented the gas mantle. In recognition of his services the Austrian Government permitted him to become the Count of the little village where he was born—Welsbach.

As precious as are rare earths is kaolin, far from common clay, which the Chinese use in the making of their wonderful porcelains. Fine and white the

sediment of granite taken from primeval seas, this super clay found its way into some of the finest works of art the world has ever known. In fact, the Chinese were so fond of it that they thought it had medicinal qualities and sometimes had it made into pills. These days one does not take kaolin pills, but one knows instinctively that some uncommon clays have a wonderful absorbent quality, which makes them especially efficient as poultices. Such is the kaolin-like earth from which Antiphlogistine is made in part. The Chinese sensed that white clay had wonderful healing properties, but here in the United States we have learned that they knew only half of the story. This uncommon clay is to-day doing much to relieve the ills to which flesh is heir, and has sounded the knell of venesection by making possible a bloodless phlebotomy.

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REGISTERED NURSES ASSOCIATION  
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Hourly nursing

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**Note:**—This Registry was formerly the Hennepin County Nurses' Registry. In 1919, when the American Nurses' Association reorganized, Minnesota was divided into six districts, Minneapolis being the headquarters for Third District. This is the official Registry for registered nurses in Minneapolis, and is managed and maintained by the Third District Nurses' Association.

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Physicians may arrange to have a lamp installed in the home of a patient. Charge, including installation, with whatever service may be necessary, and removal, is \$85.00 for three months and \$25.00 each additional month thereafter, with option to purchase; sum paid as rental to apply on purchase price.

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Messrs. Johnson & Johnson make announcement, in this issue and on another page, of two of their specialties which commend themselves very highly to the general practitioner, as well as to the specialist. One is "Synol Liquid Soap" for the hands, and the other is "Camphenol-better than Saponified Cresol," used in obstetrics and gynecology for douching.

The concise statements made concerning these two products are forcible and interesting; and the reputation of the firm making the announcement is an absolute guaranty that their statements are wholly within the bounds of truth.

When two products are thus offered by the laboratory, the medical man is glad to read the announcement, to call for the product, and to use it, and further announcements concerning like other products for the same laboratory are looked for with interest. The list of such products from the laboratory of Messrs. Johnson & Johnson is a long one.

### THOMAS HOSPITAL OF MINNEAPOLIS

Thomas Hospital is a sanatorium devoted to the care of those suffering from tuberculosis or other chest ailments. The institution is owned and operated by the same organization that operates Fairview Hospital and is served by the same administration. In more recent years its bed capacity has been needed principally for Veteran Bureau patients. The Government no longer requires these facilities, and its entire capacity is accordingly open to private patronage.

Thomas Hospital is conducted strictly as an open hospital and any physician in good standing is free to make use of its facilities.

It is located on the banks of the Mississippi river directly opposite the University of Minnesota within a few minutes ride from the Loop district, and easily accessible from any part of the city.

For particulars, call the Hospital or get in touch with Mr. Jos. G. Norby, Superintendent.

### DR. LYNCH'S SANATORIUM

There are certain outstanding facts in medicine that reveal themselves in a perspective glance over, say, a decade or so; and it is quite worth while to take such a glance occasionally. One such outstanding fact is the splendid progress made during the past ten year period in the work done in the treatment of consumption, which may be summed up in a word or two: namely, diagnosis and sanatorium care.

Even a greater fact, because perhaps a newer one, is seen in the treatment of diabetes, nephritis, and blood pressure; and, singularly enough, the treatment is the same,—early diagnosis and sanatorium care.

Among the first to undertake work in the latter line, especially in the small sanatorium, was Dr. D. W. Lynch, of West Bend, Wis., and his success has been very marked. He introduced no fads into his work, but followed the lines of treatment recognized by the medical profession as the best. His recognition by the medical men of Wisconsin and the character of his work have given Dr. Lynch's Sanatorium a very high standing in the West and a fine patronage.

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The climate of Monrovia is unexcelled anywhere for this work, and the scenery is very beautiful.

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The Swedish Hospital of Minneapolis now has a capacity of about 250 beds, and is therefore one of the largest of our Northwestern hospitals outside of state and municipal institutions. It is a large hospital in its aims and in its accomplishments. It is conducted by a church organization for the purpose of service without the faintest evidence of what denomination is thus rendering the service to the public.

It is a large hospital in its equipment, including a splendid nurses' training-school which trains nurses for its own staff and for private work outside.

It is a large hospital of thirteen departments, over which two staffs, a general and a special staff, the latter including a consulting staff, preside. These staffs are composed of active practitioners of Minneapolis.

The work done by the Swedish Hospital is a credit to the medical profession, not only of Minneapolis, but of the whole Northwest.

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Bagstad & Company., of Minneapolis, wants to assure the readers of this paper that they not only carry a very full line of surgical instruments, office equipment, and supplies for the hospital, the surgeon, and the physician, but they desire to give their patrons a service in every respect that will be helpful and pleasing to them. This service begins when a physician or surgeon or hospital superintendent enters their show-rooms or asks for information by letter.

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At least half the cases of pregnancy are subject to constipation due to pressure of the uterus and loss of tonicity of the abdominal walls. Consequent straining at stool leads to hemorrhoids.

Lesions accompanying eclampsia, vomiting in pregnancy and acute yellow atrophy of the liver are all influenced by bowel conditions. Furthermore, toxins from constipation put an additional strain upon the kidneys.

Much of the indigestion, gas and heartburn of pregnancy is due to bowel stasis. Rectal accumulations may alter the position of the uterus and by direct pressure may give rise to sciatic, lumbosacral or pseudo-ovarian neuralgia.

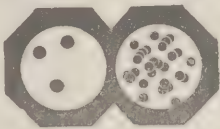
Constipation may also prove a handicap to the proper development of the infant because of the absorption of intestinal toxins which find their way to the milk.

In such conditions, cathartics or laxative medicines are contraindicated because of the danger of their reaching the infant through the milk.

The health of both mother and child is jeopardized by the indiscriminate use of cathartics. Saline cathartics deplete the system of body fluids and are particularly harmful in pregnancy. Cathartics which act through initiating peristalsis may even lead to abortion.

A lubricant is the best peristaltic regulator during pregnancy, according to a prominent gastro-enterologist. It does not upset digestion and acts both locally and generally in the intestines.

Tests have shown that a lubricant such as Nujol produces the nearest to a normal stool. It does not produce liquid feces, which form a better culture medium for bacteria than solid feces. Moreover, it cannot interfere with digestion or absorption since the surface of the gastro-intestinal tract is moist and watery and oil and water do not mix.



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In fact, Nujol may be called a physiological intestinal catalyst, since it brings about a reaction in the intestine without chemically entering into the reaction itself.

Nujol does not produce griping or gas distention as do cathartics. Unlike cathartics, Nujol has a soothing effect especially in spastic constipation, by lessening the irritation and consequent mucosal irritability. Moreover, unlike castor oil, Nujol does not produce irritant fatty acid.

Pediatricists find that a cotton swab dipped in Nujol is an excellent means of cleansing the infant's ears and nostrils. It is also used extensively for bathing the newborn until healing of the umbilicus takes place. Nujol is particularly suited to this use, since it does not turn rancid nor emit an odor. Moreover, it is never followed by a rash such as sometimes occurs where vegetable oil is used. Nujol is also employed to remove birth crusts and to soften the infant's scalp.

**Dosage:**—Physicians having wide experience in the use of Nujol recommend the following dosage:

The patient takes one tablespoonful of Nujol at bedtime and upon arising. This dose is repeated night and morning. As a rule, in from two to five days the action of Nujol will become apparent. If the walls of the intestine are coated with impacted feces, somewhat longer time may be required.

After three or four days if no movement occurs, increase the dose. Being a mechanical lubricant, Nujol is absolutely harmless and its use may be continued indefinitely without any bad effect whatever.

**Children:** One-half teaspoonful morning and evening for infants to one teaspoonful at five years.

Seepage, or leaking, may occasionally occur due to the taking of too large or too frequent doses. The use of Nujol should not be discontinued in such cases, as the seepage will not occur if the dose is reduced to the amount required in each individual case.

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Special attention given to cases referred to me by physicians.

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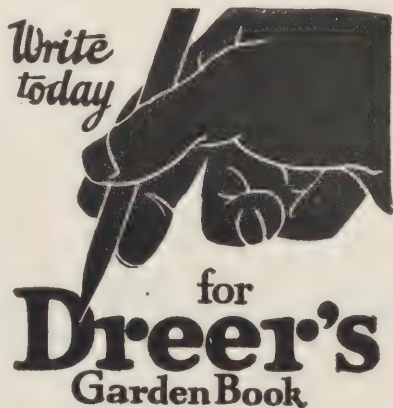
SUCCESSOR TO

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NEW YORK

CHICAGO



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It lists everything worth while in Seeds, Plants and Bulbs, with numerous illustrations and full cultural information.

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DYSMENORRHEA  
MENORRHAGIA  
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ERGOAPIOL (Smith) is supplied only in packages containing twenty capsules.

DOSE: One to two capsules three or four times a day. < < <

SAMPLES and LITERATURE SENT ON REQUEST.

MARTIN H. SMITH COMPANY, New York, N.Y., U.S.A.



## PUBLISHER'S DEPARTMENT

### THE TRIP TO WASHINGTON

Our readers have already been informed that Minneapolis hopes to have the 1928 session of the A. M. A. meet in Minneapolis, and the Minneapolis Committee in charge of the plan to bring that meeting here earnestly solicits the help of all Northwestern physicians. The Chicago, Milwaukee, and St. Paul Railway will carry special cars on its Pioneer Limited to accommodate physicians starting from the Twin Cities on May 14 and 15, connecting in Chicago with the Illinois State Medical Association Special Trains for Washington. A good place to meet congenial friends, and to talk over plans for the campaign to bring the 1928 session of the A. M. A. to Minneapolis.

### C. F. ANDERSON CO., INC. OF MINNEAPOLIS EXPANDS

Owing to the increase in their business it was necessary for this Company to acquire more space, and they now occupy both stores at 212-214 South Seventh Street, Elks Building, Minneapolis, Minnesota.

This increase is attributed, no doubt, to the good service and attractive prices which they maintain.

In addition to their complete stock of Surgical and Hospital equipment they are direct representatives, in this territory, for Castle Pressure Sterilizers and Allison Office Furniture, and have also been appointed Biological Distributors.

With these added facilities, your orders, regardless of size, will be promptly executed.

### A BANK ACCOUNT

Every physician in the Northwest will find a bank account in a Minneapolis bank especially attractive when once started, for his checks on such a bank are accepted without collection charges wherever received; and the Minnesota Loan & Trust Co. (405 Marquette Ave., Minneapolis,) both receives and solicits such accounts, and they also pay  $2\frac{1}{2}\%$  interest on checking accounts.

This Company is affiliated with the Northwestern National Bank of Minneapolis, and is one of the largest and soundest institutions of its kind in the Northwest.

Letters of inquiry are solicited and will be cheerfully and promptly answered.

### MELLIN'S FOOD

The bottle-fed infant presents to both the mother and the physician difficult problems which often yield to proper feeding in a remarkable manner; for instance, constipation in the infant yields to the use of Mellin's Food as a milk modifier, and almost always it can be used with immediate results. Modified cow's milk is, in almost every case of infant indigestion, the best remedy at hand. Pediatricians have determined this, and frequently they resort to no other remedy. Mellin's Food Co. have always been guided by the work of the world's best pediatricians, and have produced in their Food what these experts have shown to be the necessary elements of an artificial food, and by "artificial food" is meant any substitute for mother's milk.

Mellin's Food Company issue a very valuable pamphlet entitled "Constipation in Infancy," which will be sent free to any physician together with samples of Mellin's Food, if desired.

## Convalescence after Surgical Operations

Surgical shock may profoundly depress the nervous system. In convalescence from such a condition

## ESKAY'S NEURO PHOSPHATES

### SMITH, KLINE & FRENCH CO.

105-115 North 5th Street  
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Established 1841

Manufacturers of  
*Eskay's Food*  
*Eskay's Suxiphen*

is singularly valuable, because it stimulates nerve-cell nutrition, increases the appetite, improves digestion, and shortens the period of convalescence.

## AN EFFICIENT VAGINAL ANTISEPTIC

The American Drug and Chemical Co., of Minneapolis (324 Fifth Ave. South), believe physicians will find in their "Parigen Tablets" a vaginal antiseptic that will give them greater satisfaction than almost any other antiseptic preparation for vaginal use that they have ever used.

The formula is a very simple one and commends itself to all who give this product of the laboratory even a single trial.

A full-sized sample bottle with literature giving bactericidal tests will be sent to any physician upon request. Address The American Drug and Chemical Co., Manufacturing Chemists, 324 Fifth Ave. South, Minneapolis.

## THE ASBURY HOSPITAL OF MINNEAPOLIS

The staff of the Asbury Hospital of Minneapolis contains the names of over 50 men, and probably no group of like size can be found in the Twin Cities whose members contribute more largely to medical literature. This means, manifestly, that this staff contains an unusually large number of men who are fully abreast of the times in modern scientific medicine.

The beautiful building now occupied by the Hospital, with a capacity of 170 beds, its fine operating rooms, and its departments with modern equipment, and a large nurses' training school, contribute largely to the splendid work always done there.

The atmosphere of the Hospital is found in its watchwords: Unselfish, Impartial, Impersonal. Its superintendent is Mrs. Sarah H. Knight.

## THE STANDARD TONIC FOR OVER 50 YEARS

Probably of no other tonic than "Fellows" can it be said with as little exaggeration that it has been "the standard tonic for over 50 years." We venture to say that not a few readers of this journal have prescribed Fellows Compound Syrup of Hypophosphites for the past ten to forty or fifty years, and prescribed it so often that its effectiveness is never questioned by them.

While the syrup of hypophosphites is used specifically, as shown by the medical dictionary, in phthisis, scrofula, and rickets, Fellows' Compound Syrup is a general tonic and is used as a general tonic in many conditions.

"Fellows" is a dependable name.

## RIVER PINES SANATORIUM FOR THE TUBERCULOUS

The hope of accomplishing large results in the fight against tuberculosis lies in the sanatorium and in the general practitioner; that is, in early diagnosis by the family physician and in the sanatorium, where the best known treatment is obtained and where right methods of living are taught. Such a sanatorium is the River Pines institution at Stevens Point, Wisconsin, conducted by Dr. J. W. Coon, Medical Director, and Dr. H. M. Coon, Associate Medical Director. Every family physician in the Northwest will find River Pines Sanatorium an institution worth knowing, if not by a visit, by correspondence. The Drs. Coon invite visits or correspondence.

## THE WALMAN OPTICAL CO.

The physician, especially the physician in country practice, can confer a great benefit upon his patients if he is able to take care of their eyes even to a limited extent, say to the extent of recognizing in them the need of special care. Many country practitioners have qualified themselves by special courses of graduate work largely to increase their incomes and benefit their patients by this timely care of weak eyes when the early treatment of their eyes may avoid serious consequences.

The Walman Optical Co., of Minneapolis, with branch houses in St. Paul and Grand Forks, are manufacturing opticians especially prepared to meet the needs of physicians in the line of optical instruments and supplies. Having opened a St. Paul house they will be glad to receive callers in the Twin Cities at either of their St. Paul or Minneapolis houses.

**Rose  
Colds**

The annoying coryza-like conditions caused by pollen of various flowers during May and June and which many refer to as "Rose Colds" can be promptly relieved by spraying the nasal passages every hour or so with the following:

**R** Adrenalin Chlor. m.XX  
Pond's Extract dr. I to II  
Aquea destil q. s. ad oz. I  
M et Sig. Use as spray every hour or two.

POND'S EXTRACT CO., NEW YORK AND LONDON

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# POST GRADUATE COURSES

## IN ALL BRANCHES FOR PHYSICIANS AND SURGEONS

*Laboratory and X-Ray Training for Physicians and Technicians*

**Graded Courses in EYE, EAR, NOSE AND THROAT**

*For further information address*

**POST GRADUATE HOSPITAL AND MEDICAL SCHOOL, 2400 S. Dearborn St., Chicago, Ill.**



## THE MARQUETTE PHARMACY

The Marquette Pharmacy of Minneapolis (located in the La Salle Building at the corner of Marquette Ave. and Seventh Street) is conducted by a group of pharmacists of scientific training, and they fill prescriptions in a manner that must be gratifying to the physician or layman who appreciates accuracy and reliability.

They also carry complete lines of biologics, and solicit orders of this kind from our readers wherever located.

### "THE SPA"

The "Spa," of Waukesha, Wisconsin, has a very attractive plant (building and grounds) and is a thoroughly equipped institution for giving such treatments as are given in a few like institutions or "Spas" in Europe. For some years it specialized in mud baths and diet treatment for rheumatism, and still gives this treatment. Later it took up the special treatment of diabetes, nephritis, and high blood pressure, working entirely along the recognized lines of treatment for such conditions.

The "Spa," above all, is a place of rest and recuperation, and as such it is a very attractive re-

sort, and its prices are very moderate. It issues a booklet, to be sent free upon request, that is well worth sending for.

## ELECTROLYSIS

Electrolysis as an agency for the permanent removal of superfluous hair, warts, and moles has been recognized by the highest medical authorities as the *only* safe and successful method.

These blemishes, which are very embarrassing, may be permanently eradicated with practically no pain and no scar by the electric needle. The operation is tedious, and only a skilled and experienced electrologist should be consulted. It requires years of experience and practice with the electric needle to know the necessary amount of current to apply to the different skins in order to remove the particular blemish without injuring the surrounding tissue.

Be sure to consult a competent electrologist as one selects his physician, his dentist, or his oculist. Such an expert can be found at 343 Loeb Arcade, Minneapolis, in Mr. A. B. Willison, who has had years of experience in this work.

# TREPARSOL

Meta-amino-para-oxy-phenyl-arsonic acid

Oral treatment of  
amebiasis and syphilis.

Literature from

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6 Cliff St., New York

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Chronic Stubborn Cases, Readily Respond TO ENDO-INTRAVENOUS SOLUTIONS

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(Iron and Arsenic)

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Intravenously

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Anemia    Neuralgia  
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A marked effect on  
the red cell count.

Adds weight through  
deposition of fat.

Improves Oxidation  
and normal metabolism.

Boxes of 6 ampoules,

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## LINCOLN HOSPITAL

Founded 1920  
Building Fire-Proof.

The Hospital has been rated and standardized by the American College of Surgeons. It is modern in every respect, and equipped for the comfort and safety of its patient.

The Hospital maintains a medical service, scientifically co-ordinated. This Service covers Medicine, Surgery, Obstetrics, Pediatrics, and all of the specialties.

The Hospital conducts a Training-School for Nurses. The course of training covers three years and conforms to standardized requirements for entrance and graduation. Additional training is offered to young women preparing for collateral occupations, such as Surgical Supervising, X-Ray, Physiotherapy, and Laboratory.

## THE LINCOLN HOSPITAL

421 South Lincoln Street

Aberdeen, South Dakota

## PROTEIN SENSITIZATION

At the beginning of the twentieth century practically nothing was known about protein sensitization, as such, though the phenomenon itself had been frequently observed. Its most common manifestation not only before that time, but since, has been in the form of so-called hay-fever or pollinosis; but this disturbance is only a type of a constitutional anomaly of a much wider scope, covering, for example, a great variety of food substances, irritating dusts, and animal emanations.

The symptoms of protein sensitization are not specifically indicative of the etiology. Any number of proteins may produce identical symptoms. It becomes necessary, therefore, in any case of hay fever, asthma, urticaria, eczema, gastric disorder or intestinal colic that is not otherwise explicable, to test the patient's susceptibility to one or more of the proteins to which he is exposed.

Protein extracts for this purpose are offered by a number of manufacturers, all embodying, of course, the same principle but differing in form. Since the tests are made by scarifying the skin and applying the extract in small quantity, as in vaccination, it would seem that the best form of protein extract for this use would be a semifluid product, rather than liquid or powder.

This thought has occurred to Parke, Davis & Co., who offer 194 diagnostic protein extracts in glycerin-boric acid paste form, for convenient application. The extracts are obtainable singly and in groups. See the advertisement in this issue entitled "Parke, Davis & Company's Diagnostic Protein Extracts."



**Pneumo-Phthysine** INDICATED IN PNEUMIA, CONSUMPTION, INFLAMMATION, BRONCHITIS

Write for clinical trial jar.  
**PNEUMO-PHTHYSINE CHEMICAL CO.**  
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 ETC.**

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**MARTIN H. SMITH COMPANY, New York, N.Y., U.S.A.**



## PUBLISHER'S DEPARTMENT

### ANTIPHLOGISTINE AS A POULTICE

As a poultice Antiphlogistine supersedes the old-time, mussy, bacteria-breeding, quick cooling bread and milk or linseed poultices. The Antiphlogistine poultice adheres to any surface of the body, and having served its purpose "comes off clean." Moreover, it does not leave the skin bleached or wrinkled, or softened to the point almost of abrasion; but because of its composition stimulates healthy cell activity wherever it comes in contact with the skin, broken or intact.

### CAPROKOL—IT'S DIFFERENT

Messrs. Sharp & Dohme, with laboratories in Baltimore and distributing houses in several other leading cities, have given the medical profession a number of really notable products, and among them Caprokol, a urinary disinfectant that "is different." Its germicidal power compared with phenol, generally taken as a standard, is forty-five times the germicidal power of phenol, and this increase in germicidal power is obtained without destroying its non-toxic power up to the limit of the therapeutic dose.

Caprokol is wholly different from all other urinary antiseptics in use. Unlike other diuretic drugs, it reduces the surface tension of the urine, instead of increasing it. Its use is particularly indicated in pyelitis, cystitis, and urethritis; and a trial of it in any of these conditions will readily show its value. Its literature is interesting and the Company will mail samples of Caprokol to any physician wishing to receive them.

### ANGIER'S EMULSION IN PHTHISIS

The manufactures of Angier's Emulsion tell this month, in their announcement on another page, why Angier's Emulsion, which has long been prescribed by the medical profession in phthisis, just what effects are produced by its use, as follows: It allays respiratory irritation, eases the cough, and provokes expectoration. In a word, it acts just as pneumothorax acts; that is, it assists nature to work unhampered.

But this Emulsion has a general effect upon the system by improving bowel action, overcoming intestinal intoxication, and promoting the complicated processes of metabolism.

The ends sought and the manner of obtaining them are made perfectly clear.

### THE N. P. BENSON OPTICAL CO., INC.

The N. P. Benson Optical Co., with their head house in Minneapolis, and with fully equipped branches in Duluth, Aberdeen, LaCrosse, Bismarck, and Eau Claire, not only give physicians dealing in optical goods the best service in their power, but they co-operate with medical men to increase, in a wholly legitimate manner, the medical men's incomes. They are exclusively wholesalers, yet no order is too small to receive their prompt attention and best service.

In their announcement on another page they call particular attention to the kinds of lenses and frames the people now want, and which, therefore, are good sellers, giving the purchasers satisfaction and increasing the profits of the seller, all of which points are worth attention.

For any information desired about the Company's work, address the N. P. Benson Optical Co., Inc., Minneapolis, Duluth, Aberdeen, LaCrosse, Bismarck, or Eau Claire, in their respective states.

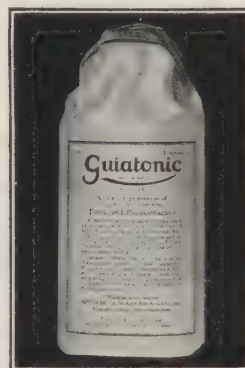
# The Lingering Cold

is gradually being recognized as one of mankind's gravest dangers, owing to the constant invitation it offers to much more serious ills. Realizing this, it is easy to understand the painstaking attention physicians now give to even the simplest nose and throat infections.

Of the countless remedies that have been recommended in the acute catarrhal infections, none has perhaps been found more effective and dependable in clearing up "the lingering cold", than Guiatonic. As its use has extended, Guiatonic has won the place it holds today as a restorative and reconstructive agent.

## Guiatonic

*A generous trial quantity free upon request. William R. Warner & Company, Inc., Manufacturing Pharmacutists since 1856. 113-123 West 18th Street, New York City*



A palatable preparation of special salts of gualacol and creosote which may be freely given to the weakest patient, without fear of gastric disturbance. It contains no narcotics.

Indicated in all depressed or debilitated conditions, or whenever a tonic is required.

## CAMPHO-PHENIQUE ANTISEPTICS

Dressings of Campho-Phenique, whether in liquid, powdered, or ointment form, are dressings de luxe in form and of long demonstrated value as an antiseptic. They are indicated in their respective forms as follows: in *liquid* form, after minor and major surgery; in *powdered* form, for sores, wounds and cuts, and abrasions of the skin; and in *liquid* form, in various diseases of the skin and scalp.

Campho-Phenique Antiseptics are of unquestioned efficacy as proven by many years of use by physicians and surgeons everywhere.

### ST. LUKE'S HOSPITAL OF FARGO, NORTH DAKOTA

The modern hospital occupies a larger place in the community to-day than it held a few years ago, even a fraction of a decade ago. It is now looked upon as well-nigh indispensable, in many respects, to the work of medical men, and if some laymen are still prejudiced against all hospitals such prejudice is due wholly to ignorance of what the modern hospital is. In the first place, such a hospital is scientifically organized to save individual human life, and, in the next place, to advance community health. This is seen in its organized departments for diagnosis and treatment and in a trained corps of nurses to materially supplement the work of the physician.

In addition to the apparatus of all kinds essential in modern medical treatment especial attention is now given to the psychological factors that develop in sickness or, indeed, that cause sickness. This need also has developed in the modern hospital the "home atmosphere," so that the dread of hospitals has well-nigh disappeared; and this is due to the medical profession.

Such a hospital is St. Luke's of Fargo, North Dakota, where the best standard of the profession is maintained, where the scientific equipment is complete, and where the "atmosphere" is kept right.

## THE PRIVATE MATERNITY HOME

Physicians are often asked to advise parents as regards maternity homes for the unfortunate daughter, and therefore they should possess information concerning such resorts; indeed, they should have *dependable* information on this point.

The Willows is a Maternity Home of established reputation for its excellent management as a home for such girls and as a maternity hospital or sanitarium. It invites correspondence with medical men, and the physician in charge will be pleased to give the fullest information desired regarding its work.

The name and address of this institution is The Willows, 2929 Main Street, Kansas City, Mo.

### CHICAGO EYE, EAR, NOSE, AND THROAT COLLEGE

We believe at no other time has so good work been done in our postgraduate schools as to-day, and this is evidently due to a single fact, which is interesting: Our medical men, young and old, have never done so good work nor so much postgraduate work, and even in these strenuous times the amount of postgraduate work is increasing. The reason for this is that the demand for better work is increasing. The specialist feels the need of it to meet the increasing demands for efficiency on his part; and the general practitioner feels the need of it to increase his efficiency in work that is not exclusively within the province of the specialist.

The Eye, Ear, Nose, and Throat College of Chicago (235 W. Washington St.) meets the needs in this line of work of both the specialist and the general practitioner. It is open the year around, and one can find there instruction in almost any particular line he may wish to pursue, as well as in general eye, ear, nose, and throat work.

In a great city like Chicago, there is no lack of material, and with very high-grade men on the staff no student at the College will be disappointed in his work.

Dr. Oscar B. Nugent is secretary, and invites correspondence from medical men.

## Rose Colds

The annoying coryza-like conditions caused by pollens of various flowers during May and June and which many refer to as "Rose Colds" can be promptly relieved by spraying the nasal passages every hour or so with the following:

R Adrenalin Chlor. m.XX  
Pond's Extract dr. I to II  
Aqua destil q. s. ad oz. I  
M et Sig. Use as spray every hour or two.

POND'S EXTRACT CO., NEW YORK AND LONDON

## Pond's Extract

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"The best is none too good for Intravenous Use"

Chronic Stubborn Cases, Readily Respond TO ENDO-INTRAVENOUS SOLUTIONS

## ENDO FER ARSEN

(Iron and Arsenic)

Indicated  
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Anemia    Neuralgia  
Chorea    Cardiac Neurosis  
Skin Diseases

A marked effect on  
the red cell count.

**Boxes of 6 ampoules,**

Adds weight through  
deposition of fat.

**Office pkg. of 25 ampoules,**

Improves Oxidation  
and normal metabolism.

**Hospital pkg. of 100 ampoules,**

Send for our booklet "Direct Medication"

**Intravenous Products Co. of America Inc.**  
 239 Fourth Ave. New York



## THE LATEST "ROCHE" PRODUCT

The hypnotic constituent of Allonal in liquid form—this is the latest announcement from the laboratories of the Hoffmann-LaRoche Chemical Works of New York.

The striking effectiveness of Allonal in the treatment of Insomnia and Pain and its now almost general usage in those fields have caused the chemistry of this remarkable product to be closely studied. Most every member of the profession knows that the fine hypnotic property of Allonal is due to the new substance evolved by "Roche" chemists, allyl-isopropyl-barbiturate.

It is only natural, then, that there has arisen a keen desire among physicians for this hypnotic substance alone in a liquid form, and the "Roche" answer is—Elixir ALURATE, which contains allyl-isopropyl-barbiturate dissolved in an extremely pleasant vehicle.

Elixir Alurate is hypnotic and sedative in action (it has no pronounced analgetic property, as has Allonal). It is very effective, quick in action and, like Allonal, seldom gives rise to any of the by-effects which so frequently follow the use of other hypnotics. It will be found especially valuable in pediatrics and psychiatry, where difficulty is often encountered in administering powder or tablets. Since it has no unusual incompatibilities, it can be combined with other substances if desired.

Elixir Alurate is marketed in 6 oz. prescription bottles, and as is usual with products bearing the trademark "Roche", it is presented in a striking, handsomely dressed package. The Elixir itself has a distinctive, brilliant, cherry red color and is very pleasing to the taste.

Write to the Hoffmann-LaRoche Chemical Works, 19 Cliff Street, New York City, for information on this, their latest product. See also their announcement on another page.

## A NEW PROTEIN TEST IN VOMITING OF PREGNANCY

In *Clinical Medicine and Surgery* for April, 1927, is an account of a new protein test of a cause of vomiting in pregnancy, devised by Henry R. Harrower, M. D.

This new test is a skin test for the tendency toward hyperemesis gravidarum and is an excellent method of determining the variation in sensitiveness to the placenta protein and the likelihood of benefit from placenta therapy.

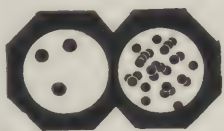
This new idea is based upon the successes that have followed the use of Placenta Co. (Harrower) in treating many cases of the severest type of hyperemesis. This remedy is given to increase immunity to these toxic proteins, and in the past ten years it has shown its value by controlling the symptoms within a week or ten days in 70 per cent of the cases.

If you wish to determine if a given case of hyperemesis is sensitive to the placenta protein and, therefore, in need of immunization to this particular substance, send to The Harrower Laboratory, Inc., Glendale, California, and a complete test will be sent; *gratis*.

### Attention

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Advertisers  
please mention*

The JOURNAL-LANCET



## DESCHIENS' SYRUP

Of Hemoglobin

Your patients with anemic tendencies will benefit by taking Deschiens' Syrup. It is a drugless treatment, an excellent example of opotherapy. Prescribed a tablespoonful in water before or after each of the two principal meals.

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Telephone—Ge. 3588  
MINNEAPOLIS, MINN.

A modern, fireproof sanitarium, devoted to the treatment of Tuberculosis.

Open to the public

## THE MANAGEMENT OF CONVALESCENCE

Hardly any problem confronting the practitioner causes him more worry than the question of how best to assure a prompt and satisfactory return to health and vigor following some severe illness or serious surgical operation. As soon as they feel better and begin to improve, patients naturally lose their fears and are prone to neglect or minimize the importance of restorative treatment. It would seem to counteract the ill effects of illness, especially the acute infections; medical men naturally regulate the diet and adjust the personal hygiene. In order, however, to promote the resumption of functional activity throughout the body, and build up an adequate reserve of vital energy and resistance, something more is almost always necessary than attention to the diet and hygiene. In other words, a dependable tonic is almost invariably called for.

Many and various are the restorative and reconstructive agents available to the profession, but probably there is none of those usually employed that will give the results that are to be obtained from the systematic use of Guiatonic.

Extensive clinical experience with this remedy in all forms of debility or weakness as well as in convalescence from the acute infections, respiratory diseases, intestinal affections, after operations and so on, has shown that Guiatonic has no superior as a dependable means, not only of restoring vitality and strength, but especially of preventing complications and relapses, and removing the after effects of acute ills and infections. A comprehensive test of this valuable product will demonstrate its tonic qualities beyond all question, and a liberal sample will be sent to any physician on request, free of all charges.

## CORRECT DIAGNOSIS THE FIRST STEP

There is perhaps no line of medical practice in which correct diagnosis is more important and essential as the first step than in the handling of patients suffering from hay fever, asthma, and other forms of protein sensitization.

And the first step toward diagnosis is to have a suitable assortment of diagnostic test material. One of the most convenient and practical outfits we have seen for this kind of work is put out by one of the manufacturing biological laboratories in the form of a test case which contains sixty different animal, food and pollen proteins, all conveniently arranged on a test board so as to facilitate recording the various proteins applied. With such a case at hand, the physician can have a place for each protein and each protein in its place.

The proteins are in dried powder form, sufficient for 25 tests of each of the 60 varieties or a total of 1500 tests. Individual proteins may be obtained to replenish the case, as required.

With such an outfit at hand, the physician can readily make the necessary tests to establish diagnosis, and the results of such tests, in conjunction with the history of the case and a knowledge of the local conditions, will aid greatly in planning a course of treatment.

If the offending pollen or protein cannot be avoided, desensitizing treatment with pollen or protein extracts may be employed with success in a majority of cases.

If you are interested in a test case of this kind, we suggest that you communicate with H. K. Mulford Company, Philadelphia, Pa., and ask them for a description of Diagnostic Test Case No. 60.

### For Professional Service

## Mead's Nurses Registry

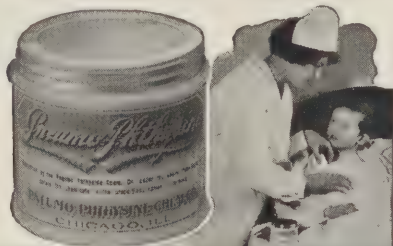
MARION A. MEAD, M.D., Registrar  
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Thirty years experience in Nursing Service in the  
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Registered, Graduates and Practical Nurses  
Hospital and Office Positions Filled

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If no answer call Atlantic 4400, Curtis Hotel  
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*Pneumo-Phthisine*

INDICATED IN FEMALE CONSUMPTION  
INFLAMMATION, BRONCHITIS

Write for clinical trial jar.  
PNEUMO-PHTHISINE CHEMICAL CO.  
220 West Ontario Street, Chicago

# ERGOAPIOL

(Smith)

For  
AMENORRHEA  
DYSMENORRHEA  
MENORRHAGIA  
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ERGOAPIOL (Smith) is supplied only in  
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MARTIN H. SMITH COMPANY, New York, N.Y., U.S.A.



# NEUTRALIZATION

## *in Excessive Gastric Acidity*

THE optimum degree of gastric acidity required for digestion is approximately 0.2%.

It is now known, however, that the gastric juice, as secreted, has a much higher acidity than this (approximately 0.5%).

When the natural factors of neutralization (such as food, saliva, secretion of the pyloric end of the stomach, and regurgitation of duodenal contents through the pylorus) fail to neutralize the gastric content, there is a need for Phillips Milk of Magnesia.

Hyperacidity of gastric contents is not so much an indication of overproduction of acid as of *Failure of Neutralization*.

Phillips Milk of Magnesia possesses antacid properties in combating gastric hyperacidity. For this purpose, it is four times as powerful as a saturated solution of sodium bicarbonate.

In addition, it is palatable and easy to take. Effective even in small dosage.

# **PHILLIPS** Milk of Magnesia

**CAUTION.** The physician is advised to beware of imitations of Phillips Milk of Magnesia. Kindly prescribe in original 4-ounce and 12-ounce bottles, obtainable from druggists everywhere.

*"Milk of Magnesia" has been the U. S. Registered Trade Mark of The Charles H. Phillips Chemical Co. and its predecessor Charles H. Phillips since 1875.*

**Prepared only by The Charles H. Phillips Chemical Co., New York and London**

## PUBLISHER'S DEPARTMENT

### LECTURES ON PHYSIOTHERAPY

A new course of lectures and demonstrations in Physiotherapy is announced, on another page, by Dr. C. W. Sampson, who is not only thoroughly posted on his subject, but is a really extraordinary speaker and demonstrator. He has visited the leading cities of the Union a half dozen times or more, and no student of the subject turns away from these courses without great admiration for Dr. Sampson and his manner of teaching.

Dr. Sampson is not so enthusiastic that he makes a fad of his subject, for he knows both the value and the limitations of Physiotherapy. He presents the subject in so clear a manner with facts concerning the work done in the World War with Physiotherapy that his students often become very enthusiastic. Courses of this kind are worthy of the highest commendation.

Dr. Sampson's work will be given in the Curtis Hotel ball-room on June 13 to 18, inclusive; and information concerning it may be obtained from the Pengally X-Ray Company of Minneapolis.

### "SUMMER" DIARRHEA

Fermentative (generally called "Summer") diarrhea produces unmistakable symptoms and is due to unmistakable causes, yet it does not always yield readily to simple treatment, that is, proper feeding to control the bacterial activity in the intestines. This can be done by adding Casec to diluted cow's milk, followed in two or three days with Mead's Dextri-Maltose. A change for the better follows at once,

and the diarrhea disturbance is entirely corrected.

Mead's Infant Diet Materials are given upon prescription of the physician and not from direction on the label, for no such directions are given. Mead's Casec and Mead's Dextri-Maltose are used in purely scientific medicine.

Samples and literature will be sent upon request to Mead Johnson & Co., Evansville, Indiana.

### LAVORIS

Lavoris is a zinc chloride preparation, originally intended as a mouth-wash, which has attained a phenomenal use, and this extensive use is due wholly to the merits of a "pleasing and efficient" preparation of a stable zinc chloride. No extravagant claims are made for it, and none needs to be made. It is "pleasing and efficient" when applied to any mucous membrane; and it is never advertised in an objectionable manner.

Lavoris is much like "Cream of Wheat" it is not patented, but is good, par excellence.

### THE MARQUETTE PHARMACY

A couple of years ago a group of high-grade pharmacists combined to conduct in Minneapolis a pharmacy on a purely scientific basis, after the manner of the best European pharmacies. The enterprise has been a pronounced success and now commands the patronage of the best physicians in the city.

The manner of work of such a pharmacy guarantees perfect accuracy in filling every prescription, the highest quality of the ingredients furnished, and, what is not supposed to be the case, perfectly fair and reasonable charges.

This pharmacy also carries a complete line of biologics, which may be ordered by mail.

# The Original!

It is well to bear in mind that Agarol was the first and original mineral oil-agar-agar emulsion to be introduced to the profession, and that its therapeutic efficiency has long since become a matter of clinical record.

Measured by the truest of all criteria, that of results, each element entering into the composition of Agarol\* fulfills a particular purpose, and through its synergistic influence contributes its share to making the composite product what so many medical men have found it—a dependable as well as rational bowel corrective.

# AGAROL

*A liberal trial quantity free to members of the profession.*

William R. Warner & Co., Inc.  
Manufacturing Pharmacutists since 1856  
113-123 West 18th Street, New York



\*A uniform, stable and perfectly homogenized emulsion of purest, high viscosity mineral oil with agar-agar and phenolphthalein ( $\frac{3}{4}$  of a grain to a teaspoonful).



### DR. LYNCH'S SANATORIUM

Dr. D. W. Lynch, of West Bend, Wis., conducts a highly ethical sanatorium for the exclusive treatment of diabetes, nephritis, and high blood pressure. After a number of years' experience, Dr. Lynch is obtaining results in these cases that are eminently satisfactory to these patients and to the physicians referring such patients to him.

Dr. Lynch invites correspondence with physicians who are interested in the sanatorium treatment of the diseases in which he specializes. Address Dr. Lynch's Sanatorium, West Bend, Wis.

### NURSES' OFFICIAL REGISTRY

When the American Nurses' Association was re-organized in 1919 Minnesota was divided into six districts, and Minneapolis was made headquarters of the Third District, and its Registry for registered nurses is now located in the Curtis Hotel under the name of the "NURSES OFFICIAL REGISTRY OF THE THIRD DISTRICT MINNESOTA STATE REGISTERED NURSES ASSOCIATION."

This Registry supplies registered graduates only, and furnishes them for private duty, for hourly nursing, and for institutional and office positions.

The Registry is managed by thoroughly competent nurses, and their recommendation is a guarantee that a nurse sent out by them is wholly competent and dependable.

### TETANUS

It is becoming easier than ever before to give a child a hypodermic of Tetanus Antitoxin, now that this biological product has been purified and concentrated to such an extent that 1500 units (the prophylactic dose) resembles nothing so much as a few drops of pure water. Vast improvements have been made in the physical properties of Tetanus Antitoxin since the product was first made available to the profession, and with this improvement in form has gone a constantly increasing use in caring for suspicious wounds.

Doses as high as 20,000 units, for treatment, are now offered, in a volume no larger than that of the 10,000-unit dose of a few years ago; and from this point down to a 3,000-unit dose.

See the advertisement in this issue headed "Tetanus Antitoxin (P. D. & Co.)—Potent, Refined, Concentrated." It will well repay perusal.

# Bank Here

We Pay  $2\frac{1}{2}\%$   
Interest on  
Checking Accounts



THE MINNESOTA  
LOAN & TRUST CO  
405 Marquette Ave  
MINNEAPOLIS  
Since 1883

# TREPARSOL

Meta-amino-para-oxy-phenyl-arsonic acid

Oral treatment of  
amebiasis and syphilis.

Literature from

George J. Wallau, Inc.  
6 Cliff St., New York



## FAIRVIEW HOSPITAL

Sixth Street between 23rd  
and 24th Avenues South  
MINNEAPOLIS, MINN.

A modern, fireproof  
hospital, operated by  
The United Church Hos-  
pital Association.

## A CONVALESCENT BEVERAGE

The old-time three-per-cent brew is not now on the market, but—Glix, a product of barley malt and hops, made by the Gluek Company of Minneapolis, is in every respect as good for the table, for the sick, or for the well, as the old-time product of yesterday.

Try a bottle of Glix, and you will be convinced that all the kick and the goodness has not gone out of barley malt, and hops.

## IRON AND MANGANESE

That the chlorotic patient needs iron and manganese in an assimilable form, and will readily yield to such treatment, is readily demonstrable. Gude's Pepto-Mangan is composed of peptones with iron and manganese, and for over a third of a century has been prescribed by medical men with a degree of satisfaction that is an assurance of its value.

The manufacturers of Pepto-Mangan (Gude) will cheerfully furnish samples (tablets or liquid form) in sufficient quantities for demonstration. For literature and samples address the M. J. Breitenbach Co., 53 Warren St., New York City.

Too many vacations are spoiled by the sudden development of ivy poisoning. The inevitable pain, distress and danger of complications that attend even the simplest attack calls for prompt and painstaking treatment. The use of compresses kept constantly wet with Pond's Extract, full strength, will assure rapid and satisfactory relief from the itching, burning, swelling and discomfort that characterize ivy poisoning and similar forms of skin irritation.

## Pond's Extract

POND'S EXTRACT CO., NEW YORK AND LONDON

## Ivy Poisoning

### For Professional Service

## Mead's Nurses Registry

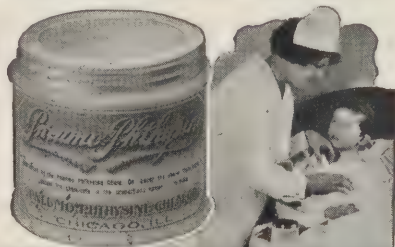
MARION A. MEAD, M.D., Registrar  
871 Curtis Hotel, Minneapolis, Minn.

Thirty years experience in Nursing Service in the City of Minneapolis

Registered, Graduates and Practical Nurses  
Hospital and Office Positions Filled

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If no answer call Atlantic 4400, Curtis Hotel  
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*Pneumo-Phthisine*

INDICATED IN PULMONARY CONDITIONS.  
WOLFF-BARTHELEMY, SMITH.

Write for clinical trial jar.  
PNEUMO-PHTHYSINE CHEMICAL CO.  
220 West Ontario Street, Chicago

## ERGOAPIOL (Smith)

For  
AMENORRHEA  
DYSMENORRHEA  
MENORRHAGIA  
METRORRHAGIA  
ETC.

ERGOAPIOL (Smith) is supplied only in packages containing twenty capsules.

DOSE: One to two capsules three or four times a day. < < <

SAMPLES and LITERATURE  
SENT ON REQUEST.

MARTIN H. SMITH COMPANY, New York, N.Y., U.S.A.





## The Mounds Park Sanitarium

This institution is a general hospital,  
especially equipped for the treatment  
of mental diseases. It offers all of the  
recognized essentials for this treatment.

*Specialists in diagnosis and care.*

*A staff of consulting physicians  
and surgeons.*

*Hospital care, partial or complete  
isolation from former environ-  
ment.*

*Especially trained nurses and  
hospital staff.*

*Hydrotherapy and occupational  
therapy.*

*An atmosphere of cheerfulness.*

Earl Street at Indian Mounds Park

Saint Paul  
Minnesota

## PUBLISHER'S DEPARTMENT

### ARCANOL

This is the new and more easily remembered name for Atophan and Acetyl Salicylic Acid Compound Tablets, a very important member of the "Greater Atophan Group." It is scoring heavily in the management of Influenza (Grippe) and the "Colds" which so readily lead to it.

Lest we forget: Some of the most obstinate "Colds" occur in the late Spring because of unexpected exposure to rain and the rapid contrasts of temperature. The "Summer Cold," too, is by no means rare.

Hence this reminder of Arcanol (Atophan and Acetyl Salicylic Acid Compound Tablets) in which the conjoint and correctly dosaged use of a universally approved antipyretic rounds out the prompt analgesic and anti-inflammatory effect of Atophan.

Information and complimentary trial package from Schering & Glatz, Inc., Bloomfield, N. J., New York, N. Y.

### "AN ADMIRABLE MATERNITY HOME"

The above is a fair characterization of the "Willows," the well-known maternity home of Kansas City, Mo., which is a private institution for the care of unfortunate girls, especially of the better class of patients who generally confide in the family physician and ask his advice, and especially about maternity homes.

The Willows will gladly send its 90-page illustrated catalogue booklet to any physician desiring

to see it. Address The Willows, 2929 Main St., Kansas City, Mo.

### GENERAL SURGICAL SUPPLIES

Messrs. Sharp & Smith, of Chicago, have conducted a "General Surgical Supply House" in Chicago for, we believe, over fifty years, and for most of that time at 55 East Lake Street. For all this time the house has been noted for the dependability of its products, whether manufactured by them, imported, or simply sold as the products of other factories.

Few houses in the entire country have made, upon order, so many instruments for surgeons as this house, and few houses have filled so large orders for hospital supplies and equipment as they.

The traditions of the house guarantee the excellence of its products and the excellence of its service.

### MEAD'S NURSES REGISTRY

A dependable Nurses' Registry is one conducted by a person who knows nurses—knows them personally and knows their idiosyncracies. To possess this knowledge requires years of familiarity with nurses and nursing business. If the registrar is a physician she also knows what is required of the nurse in particular cases. Such qualifications are rare, but they are possessed in an unusual degree by Dr. Marion A. Mead, who has had thirty years' experience at the head of Mead's Nurses Registry, which has rooms at 871 Curtis Hotel, Minneapolis, and is prepared to furnish nurses for all lines of work—registered nurses, graduate nurses, and practical nurses, and nurses for hospitals and office positions. The Registry can be reached at any time of day by telephone: Geneva 8434 or Atlantic 4400.

## Decrease of the "Alkali Reserve"



*A pleasant, effervescent granular preparation  
composed of carefully selected salts of Sodium,  
Potassium, Calcium and Magnesium.*

is directly responsible for a large proportion of those ills which are manifestations of hyperacidity. Effective alkaline treatment is imperative. Alka-Zane, antacid and diuretic, promptly neutralizes the excessive acid products and rapidly restores the normal alkalinity of the blood.

*A brief trial will demonstrate  
the efficiency of*

# ALKA-ZANE

*Literature and samples to physicians*

**William R. Warner & Co., Inc.**

*Manufacturing Pharmacutists since 1856*

113-123 West 18th Street

New York City



## TREPARSOL

(Meta-amino-para-oxy-phenyl-arsonic acid)

There is a growing interest in the oral treatment of syphilis due very largely to the research and clinical work that has been carried on abroad. A number of references to a pentavalent arsenical known as Treparsol have appeared and this product has been the subject of trial treatments by Flandin and Simon. Their results have been communicated to the Société médicale des hôpitaux de Paris, and indicate a high order of effectiveness. If you are interested in reading their report, reprints will be sent you by addressing Messrs. George J. Wallau, Inc., 6 Cliff St., New York, N. Y.

## THE POTTENGER SANATORIUM

Located in the foothills of the Sierra Madre Mountains near Los Angeles, Calif., is an institution—a sanatorium for the treatment of diseases of the lungs and throat, conducted by Drs. F. M. and J. E. Pottenger, who are doing a work that all medical men are interested in. While the location of the Pottenger Sanatorium is admirable, enabling its conductors to do a work that might not be done quite so well under other conditions, the educational value of their work for all physicians and for all climates is independent of the location and climatic conditions found at Monrovia.

We want to-day merely to direct attention to this work and to suggest that our readers become more fully acquainted with the work of the Drs. Pottenger, as done in their sanatorium and through their literature.

## How Doctors Lose Money

ONE doctor says he could cover the walls of his office with worthless oil-well and gold-mine stock certificates.

Your widow and children will appreciate a sure return of 4% more than an embossed stock certificate of no value.

Why not build up a reserve in this Mutual Bank for the protection of your family? The advice of our officers will be available when you seek an investment.

*4% Compound Interest*

## Farmers & Mechanics Savings Bank

115 S. 4th St.

Minneapolis

# Want X-Ray Supplies "P-D-Q"?

There are over 30 District Branches now established by the Victor X-Ray Corporation throughout U.S. and Canada. These branches maintain a complete stock of supplies, such as X-ray films, dark room supplies and chemicals, barium sulphate, cassettes, screens, Coolidge tubes, protective materials, etc., etc. Also Physical Therapy supplies.

The next time you are in urgent need of supplies place your order with one of these Victor offices, conveniently near to you. You will appreciate the prompt service, the Victor guaranteed quality and fair prices.

Also facilities for repairs by trained service men. Careful attention given to Coolidge tubes and Uviarc quartz burners received for repairs.

**VICTOR X-RAY CORPORATION**  
Main Office and Factory: 2012 Jackson Blvd., Chicago

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733 Marquette Ave.



**Victor X-R-P Safe**

A lead-lined steel cabinet for storing films and loaded cassettes.

Write SUPPLY SALES DIVISION for price and detailed information.

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**Quality Dependability Service Quick-Delivery**  
*~ ~ Price Applies to All ~ ~*

## THE USE OF A LUBRICANT IN TREATMENT OF DIABETIC AND OBESE PATIENTS

Most obese patients are constipated. These people are usually sedentary, and a sedentary mode of life produces constipation.

Obese people usually overeat, consuming too much food which contains starch and sugar, and too little coarse food. They eat and assimilate too well, thereby leaving too little intestinal residue.

Among the best foods for obese patients are salads, but physicians sometimes hesitate to recommend salads, which are otherwise desirable in these cases, because the fattening effect of the salad dressing defeats the very purpose for which salads are taken.

Nujol, the ideal lubricant, is being extensively used in the preparation of French and mayonnaise salad dressings, for obese or diabetic patients. Nujol should be used just exactly as olive oil is used in the recipe. It makes a highly palatable dressing, acceptable to everybody. In fact it is entirely free from those objections to taste which many people have for olive or vegetable oils.

These dressings are non-fattening and can be taken with perfect safety in conditions such as diabetes where animal or vegetable oils are contra-indicated. Nujol is therefore an important factor in the diet for obesity.

Progressive physicians are also prescribing Nujol for various forms of constipation because it is an ideal lubricant. Nujol is a high-grade, thoroughly purified, bland, non-irritating lubricant of correct viscosity. It is the one pre-eminent *safe*, and always suitable non-chemical and non-absorbable aid to fecal evacuation. No harm can come from its use, even if continued for a long period of time.

Tests have shown that Nujol absorbs many poisonous or irritating substances that have formed and been allowed to remain in the bowel as a result of stagnation. It holds them in solution and so carries them out of the body. Consequently, Nujol, by lubrication, helps Nature to overcome constipation, prevents stagnation and protects against auto-intoxication.

When prescribing Nujol it is suggested that the physician advise the patient—

(1) That no immediate, brisk evacuation is to be expected. For Nujol to filter down through the small intestine into the fecal collection in the colon and rectum takes time—from 2 to 5 days may be required.

(2) That regularity of soft, formed movements, and not copious, loose stools is to be desired and expected.

(3) That seepage is simply an indication for a reduction in the dose. If more Nujol is taken than the fecal matter will absorb, the excess may leak out at other times than at regular bowel movement. This is easily avoided if patient will keep strictly to the amount which is found to be best suited to his need.

## RADIUM SERVICE

Dr. I. J. Murphy, of Minneapolis, maintains a radium service and clinical laboratories by which he believes he can give services in each line of special value to physicians. He gives his personal attention to referred cases for diagnosis and treatment by radium or x-ray; and he rents radium to physicians who desire to treat patients in their own homes. His charges for the rental of radium are very moderate. He invites correspondence.

# Promoting Convalescence

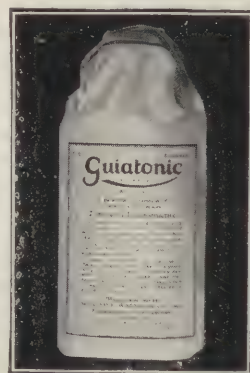
Following the acute diseases, the problem of restoring the patient to "normality"—both physical and mental—always taxes the physician's skill.

Clinical observation has shown how readily these problems can be solved by the routine and systematic use of Guiatonic.

After its administration, patients soon show a surprising restoration of appetite, with a gratifying gain in weight, strength and vitality.

## Guiatonic

*A generous trial quantity free upon request. William R. Warner & Company, Inc., Manufacturing Pharmacutists since 1856. 113-123 West 18th Street, New York City*



A palatable preparation of special salts of guaiacol and creosote which may be freely given to the weakest patient, without fear of gastric disturbance. *It contains no narcotics.*

Indicated in all depressed or debilitated conditions, or whenever a tonic is required.



## ANTI-SNAKE-BITE SERUM NOW AVAILABLE

The first license ever granted for the production and interstate sale of Anti-Snake-Bite Serum in this country was recently issued by the Treasury Department, at Washington, upon recommendation by the United States Public Health Service.

The license was issued April 25, 1927, and marks the culmination of some ten months' intensive work on the part of Dr. Afranio do Amaral—a Brazilian authority on snakes, snake venoms and antivenins—whose leave of absence from his official position has been extended to permit him to undertake the development of Anti-Snake-Bite Serum in this country.

Antivenin (Nearctic Crotalidæ), as the new product is named, is a concentrated, polyvalent serum, effective against the venoms of the principal poisonous serpents of the family Crotalidæ, to which the rattlesnakes, mocassin and copperhead belong. It is supplied in 10 c.c. syringes—10 c.c. having been found sufficient to cure the effects of snake bites in practically all cases. The serum has excellent keeping qualities and will be issued under a five-year dating.

It is interesting to note that Dr. Amaral and other authorities on snake bites regard the oft-recommended permanganates as of practically no value, as ordinarily used. If applied in concentrations strong enough to neutralize toxins it has an injurious effect on the tissues. Furthermore, alcohol and like stimulants are regarded as positively injurious, in that they only serve to hasten the distribution of the venom throughout the body.

It will be a great satisfaction, therefore, to physicians and druggists to know that they can now supply to campers, tourists, fishermen, hunters and summer vacationists, a real protection, in the form of a handy little package containing a syringe of anti-snake-bite serum and glass-encased sterile needle, with plain directions for use so written that even a layman can apply the remedy if necessary.

A package of antivenin should be included in every first-aid kit. The insurance value of having this remedy on hand in case of need is itself worth the price of the package. If further information is desired, the reader is invited to correspond with the H. K. Mulford Company, Philadelphia.



## DESCHIENS' SYRUP

Of Hemoglobin

Your patients with anemic tendencies will benefit by taking Deschiens' Syrup. It is a drugless treatment, an excellent example of opotherapy. Prescribed a tablespoonful in water before or after each of the two principal meals.

Samples and Literature

GEORGE J. WALLAU, Inc.

6 Cliff St., New York, N. Y.

## ORCHAPHRIN TABLETS

Act as a tonic and alterant to the entire system as well as an aphrodisiac.

### Each tablet contains:

Yohimbine Hydrochloride	1/12 gr.
Ext. Nux Vomica	3/4 gr.
Sod. Nuclienate	1 gr.
Orchic Substance	1 gr.
Pituitary Substance	3/4 gr.
Thyroid Substance	1/12 gr.
Suprarenal Substance	3/4 gr.

In bottles of 100 tablets—  
Price per bottle \$3.00.

(Aphrodisiac for Men)

Results are often permanent  
and generally satisfactory as indicated  
by clinical endorsement

Yohimbine as an aphrodisiac acts upon the genital organs, controls the nervous system and increases semen.

Nux Vomica besides acting as a nerve tonic overcomes depression from yohimbine.

Sodium Nuclienate is valuable in neurasthenia often associated with impotence.

Glandular Constituents correct conditions due to glandular deficiencies.

These tablets are prepared  
to correct the underlying  
causes of sexual  
impotence.

OVAPHRIN TABLETS (for women)

ENDO PRODUCTS COMPANY

241 Fourth Avenue, New York



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Sixth Street between 23rd  
and 24th Avenues South

Telephone—Ge. 3588  
MINNEAPOLIS, MINN.

A modern, fireproof sanitarium, devoted to the treatment of Tuberculosis.

Open to the public

## THE EITEL HOSPITAL OF MINNEAPOLIS

We often wonder if physicians and surgeons who are in Minneapolis, say, between trains, realize how cordial a welcome they will receive at any hospital as visiting physicians. We suspect not, and we want to suggest that this note be taken as a general invitation to such out-of-town physicians to visit any hospital in the Twin Cities, in Duluth, or Fargo, or in any city in the Northwest.

Make a beginning, for instance, in this line with the Eitel Hospital of Minneapolis, which is situated near Loring Park, is open to all physicians and their patients, and is a hospital of 100 beds, and is admirably conducted and fully equipped in all respects. Such a visit will pay any physician or surgeon.

## MASSAGE FOR WOMEN AND CHILDREN

Massage given as a pleasant form of passive exercise is not without its value and especially not without its pleasure for a tired woman or any person who lacks vitality that comes with proper exercise and proper living; but this form of massage is not to be compared with the scientific massage given by a thoroughly trained masseuse under the direction—the specific direction—of a physician who seeks definite and specific ends—and generally obtains them.

Such form of scientific massage is given, for women and children only, by Mrs E. B. Ridout and her

associate, Miss I. Crawford Anderson, whose training was obtained in London.

Miss Ridout has had twenty years' experience and has worked for a number of years with leading Minneapolis physicians, to whom both Mrs. Ridout and Miss Anderson are permitted to refer.

## COLDS AND COUGHS OF WINTER

The severe and often intractable colds so prone to occur during the winter months usually owe their occurrence to a depression of bodily functions. To relieve and overcome them it is essential to raise the vitality and nutrition of the whole organism. For this purpose there is no remedy more prompt and reliable in its effects than Gray's Glycerine Tonic Comp., and its gratifying efficiency in affections of the respiratory tract—colds, influenza, bronchitis, laryngitis and catarrhal diseases in general—has made it one of the most widely used tonic restoratives in this class of ills.

Its regular systematic administration rapidly restores the nutritional balance, and as patients gain in strength and vitality usually the most persistent and bothersome colds and coughs soon subside and completely disappear. Moreover the use of Gray's Glycerine Tonic Comp., is especially effective in preventing the complications and sequelæ of nose and throat infections that often form their greatest menace.

Too many vacations are spoiled by the sudden development of ivy poisoning. The inevitable pain, distress and danger of complications that attend even the simplest attack calls for prompt and painstaking treatment. The use of compresses kept constantly wet with Pond's Extract, full strength, will assure rapid and satisfactory relief from the itching, burning, swelling and discomfort that characterize ivy poisoning and similar forms of skin irritation.

## Pond's Extract

POND'S EXTRACT CO., NEW YORK AND LONDON

## Ivy Poisoning

### For Professional Service

## Mead's Nurses Registry

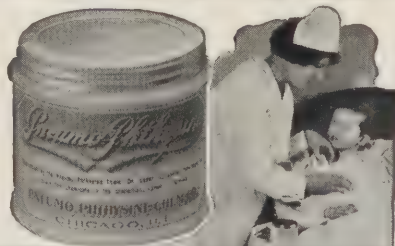
MARION A. MEAD, M.D., Registrar  
871 Curtis Hotel, Minneapolis, Minn.

Thirty years experience in Nursing Service in the City of Minneapolis

Registered, Graduates and Practical Nurses  
Hospital and Office Positions Filled

Telephone—Geneva 8434

If no answer call Atlantic 4400, Curtis Hotel  
Minneapolis, Minn.



*Pneumo-Phthisine*

Warranted by Federal Government  
UNLAWFUL TO IMITATE

Write for clinical trial jar.  
PNEUMO-PHTHYSINE CHEMICAL CO.  
220 West Ontario Street, Chicago

# ERGOAPIOL (Smith)

For  
AMENORRHEA  
DYSMENORRHEA  
MENORRHAGIA  
METRORRHAGIA  
ETC.

ERGOAPIOL (Smith) is supplied only in  
packages containing twenty capsules.

DOSE: One to two capsules three  
or four times a day. x x x

SAMPLES and LITERATURE  
SENT ON REQUEST.

MARTIN H. SMITH COMPANY, New York, N.Y., U.S.A.



# HYPERACIDITY—

## *A Vicious Circle*

**M**EYER and GOTTLIEB, in "Pharmacology Clinical and Experimental" 1914, state:

"The apparent hypersecretion (of the peptic glands), however, is often due to nothing else than an accumulation of the continually secreted gastric juice which, in cases with motor insufficiency and spasm of the pylorus, is not sufficiently neutralized by saliva from the mouth or by mucus from the stomach. (Katchowski)

"In this connection it should be remembered that *hyperacidity itself has a tendency to cause spasm of the pylorus.*"

And in this condition Phillips Milk of Magnesia *neutralizes* the excess of acid and relieves the spasm.

Phillips Milk of Magnesia combines therapeutic efficiency with inviting appearance and pleasant taste. Taken equally well by young and old.

# **PHILLIPS** Milk of Magnesia

**CAUTION.** The physician is advised to beware of imitations of Phillips Milk of Magnesia. Kindly prescribe in original 4-ounce and 12-ounce bottles, obtainable from druggists everywhere.

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**Prepared only by The Charles H. Phillips Chemical Co., New York and London**

## PUBLISHER'S DEPARTMENT

### A VICIOUS CIRCLE

The Charles H. Phillips Co., of New York, points out in their announcement on another page that hyperacidity forms a vicious circle inasmuch as an excess of acid in the digestive tract has a tendency to cause a spasm of the pylorus, which prevents relief by cutting off the neutralizing saliva from the mouth and mucus from the stomach.

Phillips Milk of Magnesia is highly recommended to break this circle because of its demonstrated therapeutic efficiency and its attractive form and pleasant taste.

It has been known as "Milk of Magnesia" for over fifty years, and it is a favorite with the medical profession.

### POSTGRADUATE COURSES

The Post Graduate Hospital and Medical School of Chicago (2400 South Dearborn Street) offers postgraduate courses in all branches for physicians and surgeons with an abundance of clinical material and instruction of the highest order. It has graded courses in eye, ear, nose, and throat work, giving the general practitioner or the specialist just what he wants, and offers such work at all times of the year.

Its X-Ray and Laboratory training for physicians or technicians is not excelled anywhere. A week or a month or longer spent by a physician in the laboratory course of the School will give splendid results, and cannot fail to be profitable to the physician who takes it.

The School invites correspondence.

### THE MURRAY INSTITUTE

The Murray Institute of Minneapolis has been under the same management for 30 years, and it confines its work to the "scientific treatment for inebriates and drug addicts." Its work is to treat, and it makes no false claims as to cures.

The Institute has a fine building and offers very attractive home quarters to its "guests" for all patients are treated as guests; and it has maintained the respect and confidence of the medical profession. It is located at 620 South Tenth Street, Minneapolis; Telephone, Atlantic 0094.

### ESKAY'S NEURO PHOSPHATES

The series of announcements made in the LANCET during the past six months, on the first of each month, concerning the properties of Eskay's Neuro Phosphates, have been very interesting. In the first place the preparation is manufactured by the well-known and old-established (1841) firm of Smith, Kline & French Co., of Philadelphia, the manufacturers of Eskay's Food. Secondly, the Neuro Phosphates is composed of calcium and phosphorus which are put up in the most soluble and absorbable form and are of absolute purity and uniform strength.

The special uses of calcium and phosphorus are, of course, known to every physician, although the specific indications for their use may not always be apparent; as, for instance, in neurasthenia, in convalescence after surgical operations or, indeed, after almost any form of illness; in post-maternity cases; etc.

Neuro Phosphates has a wide field of usefulness because of its specific usefulness in the treatment of the nervous system as a nerve-cell reconstructive.

## In Obstinate Cases of Constipation

do not fail to give Agarol a trial. Administered in proper doses, this exceptional emulsion mixes thoroughly with the feces, making them soft, plastic and passable before drying and shrinkage take place. In this condition they provide the natural stimulus to peristalsis, and this, with their incidental lubrication, helps to assure their passage within the usual period.

In action and effect, Agarol has shown that it is not merely a laxative or cathartic, but a true physiologic corrective of intestinal functions.

# AGAROL

*A liberal trial quantity free to physicians.*

*William R. Warner & Co., Inc.  
Manufacturing Pharmacutists since 1856  
113-123 West 18th Street, New York City*



A uniform, stable and perfectly homogenized emulsion of purest, high viscosity mineral oil with agar-agar and phenolphthalein ( $\frac{3}{4}$  of a grain to a teaspoonful).



## THE WAUKESHA SPRINGS SANITARIUM

The care and treatment of nervous patients can be given successfully only under certain well-defined, or, at least, well-definable, conditions, which may be stated as follows: a pleasing environment, best furnished by a home-like sanitarium located in attractive grounds; secondly, a staff of physicians specially adapted by education, temperament, and training for the care and treatment of nervous patients.

The Waukesha Springs Sanitarium of Waukesha, Wis., offers its patients such advantages in an eminent degree.

## THE DANGERS INCIDENT TO THE SUMMER VACATION

Messrs Reed & Carnrick call attention, in their card this month, to be found on another page, to the fact that dyspepsia is often found under conditions which ought to be made to cure indigestion. They sound a warning note against the change of habits that often come with a change in the mode of living due to the summer vacation, which so readily brings on indigestion by eating too much or to rich food and too much exercise at the wrong time.

These facts are familiar to all physicians, and they should inform their patients that if good is to come to them from their vacations rational living is more essential than ever when one is on a vacation. A lecture or a talk on the dangers of typhoid under the conditions that often prevail in the summer camps and boarding house and a warning against indulgence of the appetite under these conditions are due every physician's families. A suggestion that a supply of Peptenzyme Tablets be taken with the family to the woods or camp may save many a person from the dangers incident to the change of life that the business man and his family seek in their summer vacation season.

## THE PHYSICIANS AND HOSPITALS SUPPLY CO., INC.

One will go a long way, we are sure, to find a more attractive and larger line of physicians' and hospitals' supplies than can be seen on the two floors of the above named Company's new building (offices and show-rooms) at 412-414-416 South Sixth Street, in Minneapolis; and it will be an agreeable surprise to all visitors to learn how many of the articles seen in these show-rooms are manufactured by this Company in their own factories in near-by buildings.

The display on the first floor is truly beautiful, and contains apparatus, instruments, etc., that cannot fail to be of great interest to any physician, surgeon, or hospital superintendent. Under twenty or more departments or groupings these articles are arranged on the two floors. Perhaps the supplies that first attract the visitor's attention is the enamelware, such as tables of many kinds, all made by the "Company"; Alpine sun lamps; wheeled chairs and wheeled stretchers; metabolism apparatus for diagnostic purposes; sterilizers; drugs; biologicals; elastic hosiery; etc.

Such an interesting display could not have been made a few years ago for such articles were not then made.

A visit to these rooms will be a pleasure to any medical man, especially one who does not visit the larger cities a good deal and seek out these displays.

## THE MINNESOTA SANITARIUM

The attention of physicians cannot be called too often to a small group of so-called cottage homes or home-like institutions in the Twin Cities devoted to the care of a large class of patients that do not find the same conditions in the smaller cities of the Northwest. Such institutions are given over to the care and treatment of nervous and mild mental cases and, in some measure, to the treatment of drug addicts.

# TREPARSOL

Meta-amino-para-oxy-phenyl-arsonic acid

Oral treatment of  
amebiasis and syphilis.

Literature from

George J. Wallau, Inc.  
6 Cliff St., New York

To allay the heat rashes and various skin irritations so common to the summer months, there is no lotion more effective than Pond's Extract, full strength—or diluted with water equal parts. Cooling, soothing and anti-pruritic, the use of Pond's Extract quickly overcomes the itching, smarting and burning that accompany the hives, sunburn, chafing, ivy-poisoning, etc.

POND'S EXTRACT CO., NEW YORK AND LONDON

## The Skin In Summer POND'S EXTRACT

# ANIMASA

Registered Trade Mark

## IN ARTERIOSCLEROSIS

Animasa is a treatment directed at the cause. An organic remedy used with successful clinical results both here and in Europe. Also indicated in Hypertension and as a prophylactic.

Write for facts you should know.

Animasa Corporation  
109 W. 57th St., New York

A typical institution of this character is the Minnesota Sanitarium which is open to all reputable physicians. If desired, patients may be put under the care, partially or wholly, of the Medical or the Associate Medical Director of the Sanitarium, the former of whom is Dr. L. M. Crafts and the latter is Dr. Julius Johnson, both well-known Minneapolis specialists in nervous diseases.

General information concerning the Sanitarium may be obtained from the Resident Manager, A. M. Huber, Fifth Ave. South and Franklin, Minneapolis. Prices are moderate.

#### THE LOESER INTRAVENOUS SOLUTIONS

The slogan of the Loeser Laboratory (formerly the New York Intravenous Laboratory) is "Have made intravenous medication a safe, practical office technic." This very desirable end has been accomplished by standardizing all Loeser Intravenous Solutions and certifying the same, thus rendering the use of them entirely free from possible untoward results.

At this season of the year hay fever and asthma are most thought of as diseases that are fast yielding to this form of medication, and the results attained in arteriosclerosis, hypertension, nephritis, and similar conditions are such that every physician is turning more and more to a study of intravenous medication.

The Loeser Laboratory, of 22 West 26th St., New York City, will gladly correspond with physicians upon the subject, furnishing literature from sources that cannot be questioned as to the results now obtained from intravenous medication.

#### *For Professional Service*

### **Mead's Nurses Registry**

MARION A. MEAD, M.D., Registrar  
871 Curtis Hotel, Minneapolis, Minn.

Thirty years experience in Nursing Service in the City of Minneapolis

Registered, Graduates and Practical Nurses  
Hospital and Office Positions Filled

Telephone—Geneva 8434

If no answer call Atlantic 4400, Curtis Hotel  
Minneapolis, Minn.

#### ERGOAPIOL

Ergoapiol is composed of apiol, ergotin, oil of savin, and aloin, and for many years has demonstrated its value in the usual disturbances of menstruation. It produces the desired analgesic and sedative effects on the reproductive system without the by-effects of anodyne or narcotic drugs.

Ergoapiol is very extensively used in the treatment of amenorrhea, dysmenorrhea, and like disturbances, and has stood the most exacting clinical tests. It is in every respect a combination of drugs that commends it to the confidence of the general practitioner as well as the specialist in the diseases of women. It should be specified as "Ergoapiol (Smith)."

## **St. Luke's Hospital**

**Broadway and Eighth Ave. North**

**FARGO, - NORTH DAKOTA**

Department of X-ray Diagnosis and Treatment.

Radium Service.

Pathological Laboratories, including Basal Metabolism, Wassermann, Blood Chemistry, etc.

Physiotherapy including Massage, Electricity and Ultra Violet.

Hospital capacity 150 beds, maintains a School of Nursing with a Curriculum adopted by the National League of Nursing Education.



## **FAIRVIEW HOSPITAL**

Sixth Street between 23rd  
and 24th Avenues South  
**MINNEAPOLIS, MINN.**

A modern, fireproof  
hospital, operated by  
The United Church Hos-  
pital Association.



## PUBLISHER'S DEPARTMENT

### LISTERINE

The Lambert Pharmacal Co., of St. Louis, Mo., have made Listerine known around the globe, and yet it is a proprietary article that almost all physicians use and recommend. It is simply a mild antiseptic put up in "elegant" form, and put forth with no blare of trumpets and no extravagant claims to fool the public.

It commends itself by its excellence to both physicians and laymen.

### CALCREOSE

One of the really great steps in modern medicine is the progress of the process of removing elements not desired in a chemical or physical compound; for instance, the removal of a taste or an odor that renders a product unfit for use in medication. A list of such objectionable elements is not a short one by any means.

A notable instance of this advance is seen in the case of creosote, which was almost discarded from medicine because of its bad effects upon the stomach, while it was known to be an intestinal antiseptic of great value, and especially effective in pulmonary inflammations. The laboratory turned

the trick, and to-day creosote in the form of Calcreose can be given to any patient in any amount with perfect freedom from stomach trouble.

Calcreose is manufactured in powder, tablet, and liquid forms, by the Maltbie Chemical Company, of Newark, New Jersey.

### GASTRON

Gastron is a complete gastric-gland extract and is a clinical resource against disorders of gastric function.

In the above brief statement the physician finds a solution of many of the problems that daily present themselves to him, problems arising from gastric disturbances.

Gastron is the culmination of a work carried on for many years by one of the most dependable firms of laboratory investigators in America, Messrs. Fairchild Bros. & Foster, who have specialized almost exclusively in gastric investigations. They have produced a product in which they have the utmost confidence, for it represents the progress of a research study covering a period of one-half a century.

The literature of Gastron is very extensive and very interesting; and, while it tells of marked success in the work of a high-grade laboratory, it is free from extravagant claims. It will be cheerfully sent to any physician asking for it.

## Pollen Antigens-*Lederle*

### FOR HAY FEVER

Extensive clinical experience of physicians in all sections of the United States has demonstrated during the past thirteen years that hay-fever can be prevented or alleviated with Pollen Antigens (Lederle).

Pollen Antigens (Lederle) have been prepared during the past thirteen years by the method devised and originated in the Lederle Antitoxin Laboratories. This method has been shown to provide the maximum antigenic qualities of the pollens and to insure uniform stability of the extract.

Pollen Antigens (Lederle) since their introduction to the medical profession in 1914, have been standardized by the complement-fixation method which accurately determines the amount of antigenically active pollen protein in the extract and thus insures accurate dosage.

The scheme of dosage of Pollen Antigens (Lederle) with terminal doses of 3,000 pollen units meets the requirements of the intensive form of hay-fever treatment recommended by BROWN, BERTON, KAHN, GROTHAUS, and others.

[ Material for Diagnostic Skin Tests will be furnished physicians without charge. Illustrated booklet with complete information for the diagnosis and treatment of hay-fever sent on request. ]

## LEDERLE ANTITOXIN LABORATORIES

633 ANDRUS BLDG., MINNEAPOLIS, MINN.

## NOYES BROS. & CUTLER

The house of Noyes Bros. & Cutler, of St. Paul and Minneapolis, is known as the oldest and largest drug house in the Northwest. It began early to deal directly with physicians, and it uniformly gained their confidence and never abused it.

Its departments grew rapidly, yet largely, to meet the need not only of physicians but of surgeons and hospitals; and its service constantly expanded until the word "service" took on a new meaning. The house has always been known for its excellent service which is co-extensive with the needs of medical men at every point in their professional work.

## MASSAGE FOR WOMEN AND CHILDREN

Scientific massage given under the direction and supervision of a physician by a trained masseuse has a distinct place in the practice of medicine, whether the massage is given as merely passive exercise or for the restoration of the lost power of a limb or organ through infantile paralysis or other disease. Massage of this kind may be made of inestimable value to the general practitioner as well as to the specialist.

For twenty years Mrs. E. T. Ridout, of Minneapolis, has been doing such work for some of our leading physicians, confining her work to women and children. She has recently associated with her Miss I. Crawford Anderson, C.S.M.M.G., who had her training in London. She comes to Minneapolis with very high recommendations given by men of the best standing in the city of London, England.

This combination enables these two women to give an enlarged service by treating patients at the hospital, the home, or their office in the Donaldson Building.

## SNAKE WORK WINS AWARD

For his brilliant achievement in producing an Antivenin or Anti-Snake-Bite Serum that is effective against all types of poisonous snakes usually found in North America, Dr. Afranio do Amaral has been awarded the John Scott Bronze Medal, also a prize of one thousand dollars.

The award is made annually, "for useful inventions for the use and benefit of mankind," by the committee of Wills Hospital and the Board of City Trust of the City of Philadelphia.

Dr. Amaral is Director of the Antivenin Institute of America, which is a division of the Mulford Biological Laboratories at Glenolden, Pa. We congratulate Dr. Amaral upon this recognition which he has so richly deserved.

## KENILWORTH SANITARIUM

Kenilworth is six miles north of Chicago, and is the home of the Kenilworth Sanitarium, an institution with a well-deserved reputation. It is a sanitarium for the treatment of nervous and mental disease by the best therapeutic methods known to the medical profession.

As the picture of the building and grounds (see announcement on another page) shows, and as stated in such announcement, the building and location are well-nigh ideal for the work done there by Drs. Ella Blackburn, Ralph C. Warne, and Sanger Brown. All the appointments are elegant and the service is such as to meet the needs of the most exacting.

The Kenilworth Sanitarium has been conducted on this high-scale of service for over twenty years. Correspondence with physicians is invited.

# ALKA-ZANE



*A pleasant, effervescent granular preparation composed of carefully selected salts of Sodium, Potassium, Calcium and Magnesium in physiologically correct proportions.*

is a palatable and rational antacid, indicated in all conditions of relative hyperacidity, rheumatism, gout, intestinal, gastric and certain cutaneous disorders.

Prompt in action, lasting in effect, it promotes diuresis, neutralizes excess acid production and helps to rebuild the alkaline bases.

The efficiency of Alka-Zane is demonstrable by the briefest of trials.

*A supply for clinical use and literature can be obtained from*

**William R. Warner & Co., Inc.**

*Manufacturing Pharmacutists since 1856*

113-123 West 18th Street

New York City



## HORMOTONE

Hormotone is a combination of tonic hormones from thyroid, pituitary, suprarenal, and gonads. It supplies the physiological stimulus to the endocrine glands whose functional activity determines the normal menstrual flow, hence its indication in disorders of menstruation and the menopause.

Hormotone is generally indicated in any run-down condition, neurasthenia, cardiac asthenia, hypotension, etc.

The old-established house of G. W. Carnrick Co., of New York City (413 Canal Street), manufacture Hormotone, and their work is done in a highly scientific manner in their own laboratories.

## REST HOSPITAL

Minneapolis has long been the home of a few well-conducted cottage hospitals, some of which are open to all reputable physicians. A so-called "Cottage" hospital generally occupies a handsome residence in a desirable part of the city, abandoned by its former occupants' seeking new residential districts.

Such a hospital is the "Rest Hospital," located at 2527 Second Avenue South and conducted by two registered nurses who have had large experience in hospital work and who have developed sufficient executive ability to conduct a hospital that meets the requirements of some of our best and most exacting physicians. These nurses are M. R. Moran and Bea O'Brien, who have been engaged in this work for many years. They are indeed experts, and can work in the closest co-operation with physicians who send them patients. Their personal attention is given to all patients, especially the nervous and mental cases.

A patient in this hospital may remain under the care of the physician sending the case, or will be

cared for by the Medical Directors of the hospital, Drs. Arthur S. Hamilton and H. B. Hannah.

For further information address Rest Hospital, 2527 Second Ave. So., Minneapolis, Minn.

## A SURVEY OF FOCAL INFECTION

In a small pamphlet of 32 pages the subject of focal infection is treated very fully, but very concisely, under the headings of "Foci of Infection," "Systemic Disease Due to Focal Infection," "Diagnosis," and "Treatment."

Two pages of bibliography covering 29 citations of articles from American medical journals add much of interest and value to the pamphlet.

The whole is interesting and instructive.

The pamphlet is published for free distribution by the Fellows Medical Manufacturing Company, Inc., of New York City.

## Attention

*When writing  
Advertisers  
please mention*

The JOURNAL-LANCET



## DESCHIENS' SYRUP

Of Hemoglobin

Your patients with anemic tendencies will benefit by taking Deschiens' Syrup. It is a drugless treatment, an excellent example of opotherapy. Prescribed a tablespoonful in water before or after each of the two principal meals.

Samples and Literature

GEORGE J. WALLAU, Inc.

6 Cliff St., New York, N. Y.

To allay the heat rashes and various skin irritations so common to the summer months, there is no lotion more effective than Pond's Extract, full strength—or diluted with water equal parts. Cooling, soothing and anti-pruritic, the use of Pond's Extract quickly overcomes the itching, smarting and burning that accompany the hives, sunburn, chafing, ivy-poisoning, etc.

POND'S EXTRACT CO., NEW YORK AND LONDON

## The Skin In Summer POND'S EXTRACT

# ANIMASA

Registered Trade Mark

## IN ARTERIOSCLEROSIS

Animasa is a treatment directed at the cause. An organic remedy used with successful clinical results both here and in Europe. Also indicated in Hypertension and as a prophylactic.

Write for facts you should know.

Animasa Corporation  
109 W. 57th St., New York

## THE PREVENTION OF FECAL RETARDATION

When from improper food, sedentary habits, lack of exercise, neglect of the bowels or other conditions, the normal wastes are retained in the bowel beyond the required period, overdigestion and over-absorption take place, with the result not only that the body absorbs unnecessary and often highly toxic material, but the intestinal residue becomes dry and hard and greatly reduced in bulk. Obviously in this condition the fecal mass is passed along with difficulty, and owing to its decrease in size, is unable to give the impetus it normally does to peristalsis.

It is plain to see, therefore, that to afford more than temporary relief, the treatment of chronic constipation must be able to bring about evacuation of the natural bowel wastes before drying and shrinkage in volume have time to occur.

To accomplish this, there is probably no remedy that the practitioner will find more serviceable and satisfactory in every respect than Agarol. A moment's consideration of its composition\* will show at once its fitness for keeping the feces soft, plastic and well lubricated, thus assuring their passage and evacuation before overabsorption can cause their shrinkage.

It is well to bear in mind that Agarol was the first and original mineral oil—agar-agar emulsion—to be introduced to the profession, and that its therapeutic efficiency has long since become a matter of clinical record. This efficiency does not depend solely upon any separate and single feature of

Agarol. On the contrary, it is the preparation as a whole—the exceptional homogeneity and stability of the emulsion and the carefully balanced combination of all its ingredients—that give to Agarol its unique value in restoring the functional regularity of the bowels. Measured by the truest of all criteria, that of results, each element entering into the composition of Agarol fulfills a particular purpose, and through its synergistic influence contributes its share to making the composite product what so many medical men have found it to be—a dependable as well as rational bowel corrective.

\*A uniform and perfectly homogenized emulsion of purest, high viscosity mineral oil with agar-agar and phenolphthalein (¼ of a grain to a teaspoonful).

## St. Luke's Hospital

Broadway and Eighth Ave. North  
**FARGO, - NORTH DAKOTA**

Department of X-ray Diagnosis and Treatment.

Radium Service.

Pathological Laboratories, including Basal Metabolism, Wassermann, Blood Chemistry, etc.

Physiotherapy including Massage, Electricity and Ultra Violet.

Hospital capacity 150 beds, maintains a School of Nursing with a Curriculum adopted by the National League of Nursing Education.

### *For Professional Service* **Mead's Nurses Registry**

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Thirty years experience in Nursing Service in the City of Minneapolis

Registered, Graduates and Practical Nurses  
Hospital and Office Positions Filled

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## THOMAS HOSPITAL

Sixth Street between 23rd  
and 24th Avenues South  
Telephone—Ge. 3588  
MINNEAPOLIS, MINN.

REPTERB111111

A modern, fireproof sanitarium, devoted to the treatment of Tuberculosis.

Open to the public



# In the Morning Sickness of Pregnancy

**T**HE cause of acid dyspepsia is frequently the result of too stimulating a diet. In consequence, chemical excitation of the secretory glands is produced with hyperacidity.

Diet regulation is of prime importance, but the immediate symptoms can be quickly controlled and the danger of recurrence prevented by alkaline therapy.

Phillips Milk of Magnesia provides an effective antidote to hyperacidity. It not only provides a non-irritant antacid, but by its aperient effects tends to prevent autointoxication and acidosis. Being free from carbonates, it does not distend the stomach or cause flatulence of the lower intestinal tract.

Patients take to Phillips Milk of Magnesia because it is pleasing in appearance and easy to take.

Physicians prescribe Phillips Milk of Magnesia because they get RESULTS.

## **PHILLIPS Milk of Magnesia**

**CAUTION.** The physician is advised to beware of imitations of Phillips Milk of Magnesia. Kindly prescribe in original 4-ounce and 12-ounce bottles, obtainable from druggists everywhere.

*"Milk of Magnesia" has been the U. S. Registered Trade Mark of The Charles H. Phillips Chemical Co. and its predecessor Charles H. Phillips since 1875.*

**Prepared only by The Charles H. Phillips Chemical Co., New York and London**

## PUBLISHER'S DEPARTMENT

### VIRTUS SPLINTER FORCEPS WITH MORTISE LOCK

The forceps are designed to cover the requirements in removing deep-seated splinters which cannot be removed by the tweezer type of forceps.

All splinter forceps have needle points, which must approximate perfectly in order to function properly. Screw locks are not adapted for bringing sharp points into perfect approximation for any length of time. They become loose very quickly in use, and the points will not meet true after the screw is worn even slightly.

The Virtus Splinter Forceps are made with a mortise lock. The large bearings on this almost indestructible lock will resist wear for years; it will prevent the needle-sharp points from meeting out of line. The points of these forceps will remove any splinter they may grasp, no matter how deeply it is seated. C. Bagstad & Co., 89 South Ninth Street, Minneapolis, Minn.

### CHAMBERLAIN SANITARIUM AND HOSPITAL OF CHAMBERLAIN, S. D. SUMMARY OF WORK DONE AT THE SANITARIUM AND HOSPITAL FOR YEAR 1926

The Clinic connected with the Sanitarium examined 3,544 patients in the sanitarium and hospital departments. Two hundred eighty-five submitted to operation.

In the obstetrical department forty-seven babies were born.

Thirty-three patients remained in the institution January 1, 1927. There were twelve deaths during the year.

The institution is completely equipped for all physiotherapeutic treatments. A clinical laboratory and x-ray department are maintained.

All patients suffering from acute and chronic diseases, except insanity and tuberculosis, are admitted. The institution has been in active operation for twenty years. See their announcement on another page.

### EXTRAORDINARY BIOLOGICAL SERVICE

Mr. Joseph E. Dahl, of Minneapolis, discovered some years ago that the needs of physicians in the line of biological service called not for a common service, but an extraordinary service, the best service that can be rendered; and he decided to furnish it, not only to the physicians in the Twin Cities, but to all the physicians of this section of the country served from this extraordinary medical center.

It is no exaggeration to say that such a service is invaluable, and, moreover, that Mr. Dahl has shown himself equal to rendering such service at any time, day or night.

He carries a full line of vaccines, serums, and ampoules, etc., and invites correspondence with physicians that they may become familiar with his ability and desire to render a service that will please all who entrust their orders to him.

His place of business and his telephone calls will be found in his card on another page of the LANCET.

*Bank  
Here*

**We Pay 2½%  
Interest on  
Checking Accounts**



**THE MINNESOTA  
LOAN & TRUST CO**  
405 Marquette Ave  
MINNEAPOLIS  
Since 1883

**ERGOAPIOL**  
(Smith)

For  
**AMENORRHEA  
DYSMENORRHEA  
MENORRHAGIA  
METRORRHAGIA  
ETC.**

ERGOAPIOL (Smith) is supplied only in packages containing twenty capsules.

DOSE: One to two capsules three or four times a day. < < <

SAMPLES and LITERATURE  
SENT ON REQUEST.

MARTIN H. SMITH COMPANY, New York, N.Y., U.S.A.



## THE MINNESOTA LOAN & TRUST COMPANY

The Minnesota Loan and Trust Co., of Minneapolis, seeks business relations with medical men, whose needs they know and whose needs they can meet in a measure that few physicians understand; and, therefore, they invite our readers to visit or write them. They pay interest on checking accounts, they do a general trust business and a loan business. The Company is affiliated with the Northwestern National Bank of Minneapolis, one of the largest banks in the Northwest, and they cheerfully give advice to professional men who often so sorely need it.

Every wise and careful business man should form close relationship with a trust company, as most such men do; and, surely, no physician should remain long in ignorance of the great help such relationship will bring to him.

The Minnesota Loan & Trust Company is worthy the utmost confidence.

### A SYMPTOMATIC TREATMENT OF TUBERCULOSIS

Every physician will be interested in a forthcoming publication entitled "A Symptomatic Treatment of Tuberculosis," a clear and concise outline of the status of tuberculosis therapy. The book contains a thorough review of the immunologic and therapeutic phases of the subject. In addition, it presents a new viewpoint in regard to the pharmacology of the substances guaiacol and calcium, setting forth the action of these two remedies in bringing about amelioration of temperature and night sweats. The effect of both of these substances is shown to be similar to the effect of rest, in establishing the desired quiescent state, so essential in the treatment of tuberculosis.

A unique feature of the publication consists in an extensive array of clinical data and case histories, being a translation and résumé of the thesis "Guaiacol and Calcium Intravenously in the Treatment of Pulmonary Tuberculosis," by Rodolfo Alvarez Boettiger, published in the Revista de Ciencias Medicas, the official publication of the Mexican Army and Navy Department of Military Medicine.

The book may be obtained from the Loeser Laboratory, 22 West 26th Street, New York.

### POLIOMYELITIS ANTISTREPTOCOCCIC SERUM

In Physicians' Bulletin, No. 58, one of a series issued recently by Eli Lilly and Company, attention is called to the latest addition to their biological list, a poliomyelitis antiserum.

Despite the fact that much skepticism exists regarding the etiology of poliomyelitis, considerable importance, it is thought, attaches to this announcement.

It is, to the best of our knowledge, the only biological product on the market at this time for the specific treatment of acute poliomyelitis, or, as it is more commonly termed, infantile paralysis. It is prepared from the streptococcus isolated from cases of the disease by Dr. E. C. Rosenow, of the Mayo Foundation, and considered by him and his associates to be the cause of the disease. The observations which have been made on the serum in more than eight years of clinical trial and in over a thousand cases furnish evidence of the importance of the organism in the production of symptoms in poliomyelitis. They show that the incidence of residual paralysis is less in the serum treated cases and that the mortality rate is reduced. The curative action would seem attributable to the specific

## Neurasthenia

In the symptom-complex of neurasthenia, usually the result of prolonged mental strain or overwork, there is marked depression of the vital forces and nervous debility. In such conditions

## ESKAY'S NEURO PHOSPHATES

### SMITH, KLINE & FRENCH CO.

105-115 North 5th Street  
Philadelphia, Pa.  
Established 1841

Manufacturers of  
*Eskay's Food*  
*Eskay's Suxiphen*

is of paramount value as a nerve-tissue reconstructive. Not only does it stimulate nerve-cell functions and improve nerve-cell nutrition, but it acts also as a stomachic bitter, increasing the appetite and improving the digestion.

antitoxic and antibacterial substances contained in the serum. Concentration has made the preparation easier of administration by very materially lessening the dosage volume and diminishing the likelihood of serum reaction.

The limitations of drug therapy in preventing the ravages of this dread infection will serve to create interest in this new product in the minds of progressive physicians who more and more are coming to rely upon specific therapeutic measures.

Further information and literature may be obtained by addressing Eli Lilly and Company, Indianapolis, Indiana.

#### PASTEUR UP TO DATE

It was Pasteur, as every one knows, who first proved that the bite of a rabid dog was not necessarily fatal; more than that, that the development of hydrophobia in the case of a person so bitten could be prevented with almost absolute certainty. The protective agent was the attenuated virus of rabies, from the spinal cord of a rabid dog, and the doses differed from each other in the degree to which the virus had been attenuated,—first a very weak dose, then a stronger, and so on, the object being, of course, to develop resistance in the patient before the end of the incubation period of the disease. The method itself was considered so dangerous by Pasteur himself that he hesitated to use it on a human being when the opportunity arose. But it has since that time saved unnumbered lives.

Pasteur was the pioneer. Since his time a method has been discovered for eliminating entirely the element of danger from the use of rabies vaccine,

without the least sacrifice of protective effect, so that now there is no possibility of harm resulting from the proper use of the improved vaccine, and the record of successful inoculations is 100 per cent to the good.

The virus is not merely attenuated, but killed, in the Cumming Vaccine, marketed by Parke, Davis & Co., and all the doses are alike, thus rendering this product different not only from the original Pasteur product, but from bacterial vaccines. In the use of bacterial vaccines the doses are graded, but this is not the case with the Cumming vaccine. It is quite apparent from the results reported that immunity does not in this case depend upon graded doses, but only upon the use of an active vaccine administered daily for the required period—14 days or 21 days, according to the location and severity of the wound.

Parke, Davis & Co. offer a 24-page illustrated booklet on Rabies to medical inquiries.

#### PRIESTLEY, SEER OF AIR

Every physician who administers oxygen; every dentist who gives a whiff of laughing gas; every layman who takes a sip of soda water in midsummer, owes something to Joseph Priestley, scientist and odd genius.

Chemists always have something to say about him in August, and this year they are talking more than their wont, because on the first day of the eighth month, 1774, he discovered oxygen. So 1927, A. D., marks the 153d anniversary of that epoch making.

---

## Not a Mere Evacuant

Many remedies on the market today are effective in clearing out the intestinal tract, but the all-important property that makes Agarol so different from ordinary laxatives, is that its regular use gradually trains the bowels to act naturally and regularly within the usual evacuation period. This is the logical outcome of the physiologic character of its action.

The more familiar the practitioner becomes with Agarol, the more he will appreciate its outstanding merits.

## AGAROL

*A liberal trial quantity free to physicians.*

*William R. Warner & Co., Inc.*

*Manufacturing Pharmacutists since 1856*

*113-123 West 18th Street, New York City*



A uniform, stable and perfectly homogenized emulsion of purest, high viscosity mineral oil with agar-agar and phenolphthalein ( $\frac{1}{4}$  of a grain to a teaspoonful).



Priestley was most happy when he was in a fight. His temper was ever a fiery one. If it had not been, the world might have missed many things which he gave it. He tried to be a preacher, but his theology was so radical that he could not enter any formal church and started an independent congregation in Birmingham.

His views on politics and social matters were just as pronounced. He brought on himself the rage of his fellow citizens by his much too frank opinion of them in a little book called "Familiar Letters on the Inhabitants of Birmingham," and followed that up with an attack on kings and their ways. He was leading all competitors for the unpopularity contest, when July 14, 1791, the anniversary of the French Revolution and the fall of the Bastille, he had a real housewarming party. A mob burned down his little church, and also his home, in which were his library, his apparatus, and the records of his researches.

Then he sailed for America where he arrived after a stormy voyage of two months, and found peace for a time in Philadelphia. Priestley knew

Benjamin Franklin whom he had met through their common interest in electricity, and through him came in close touch with the American Philosophical Society "Old Ben" had founded. Through that learned organization he communicated some of his most important discoveries.

Declining the presidency of the University of Pennsylvania, Priestley retired to the little town of Northumberland, Pa. It was in Northumberland that Priestley died and there he was buried in an old churchyard. A movement was recently started to move his house to the campus of the Pennsylvania State College.

It will be remembered that in 1776 Priestley discovered nitrous oxide, or laughing gas, which soon was used as a mild anesthetic. He made hydrochloric acid and ammonia known to the world and told it, for the first time, what carburetted hydrogen was. To him also goes the credit for the discovery of carbon monoxide. His researches indicated that nitric acid is formed by passing of electric sparks through the air, and thus he was the pioneer of "air mining," for he made possible the fixation of atmospheric nitrogen.

Of the multitude of remedies that are recommended for hay fever, clinical experience has shown that the following prescription is one of the best and most effective the physician can employ for the controlling of the symptoms of this distressing affection:

**R** Adrenalin Chlor. m. XV  
Pond's Extract dr. I to II  
Aqua destil q. s. ad oz. I  
*M et Sig.* Use as a spray every hour or two.

POND'S EXTRACT CO., NEW YORK AND LONDON

## Pond's Extract Hay Fever

## TREPARSOL

Meta-amino-para-oxy-phenyl-arsonic acid

Oral treatment of  
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To this great leader in the realm of pneumatics, we owe the beginnings of many industries which depend upon the use of gases. His analyses of the air started the investigations which resulted in others finding rare elements, such as the gas helium, which, almost as light as the inflammable hydrogen, but as flame-proof as nitrogen, enabled the airship Shenandoah to be proof against lightning and fire. He pointed the way to the use of the so-called poison gases in chemical warfare and for medicine and industry.

Year by year, Priestley is getting more and more up to date—not only in his chemistry, but in his politics and theology.

His discovery of oxygen, by which he is best known, demolished a time-honored theory over which scientists puzzled so many years. In order to account for the burning of things, Stahl, the noted chemist and physician, assumed that there was a subtle fluid which was combined with ash in inflammable bodies, and escaped when combustion occurs. The flame and the heat were, according to this view, the effort of the phlogistin, as Stahl called it, to free itself from an affinity. In fact, Priestley called oxygen "dephlogisticated air" at first. The investigations of Scheele, the Swedish chemist, and of Lavoisier, the French scientist, who were also working on the theory of combustion, swept aside the picturesque but unsound ideas of Stahl and showed that burning was due to the effect of the oxygen in the air. Of course, their views were bitterly opposed by prejudiced followers of the old idea. The controversy of the "pros" and the "antis" over phlogistin was in fact one of the bitterest which marked science in the eighteenth

century. The upholders of the Stahl theory were called phlogistians; the opponents Anti-phlogistians, and both names are in modern lexicons.

The name phlogistinis, derived from the Greek word, meaning to burn, or to be inflamed. In these days there has come into the dictionary Anti-phlogistine, the designation of mineral poultice in inflammation. The remedy in itself is a protest against an unsound practice which research has proven harmful—blood letting. At one time, even learned men maintained that phlebotomy was justified. Modern science has shown that the congestion due to too much fluid can be relieved without recourse to the lancet—and out of that discovery a new term has come into the vocabularies of many nations.

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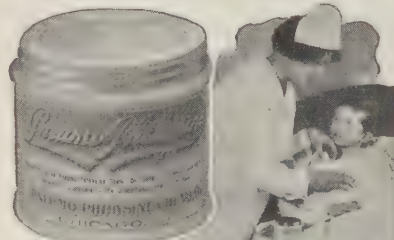
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*Specialists in diagnosis and care.*

*A staff of consulting physicians  
and surgeons.*

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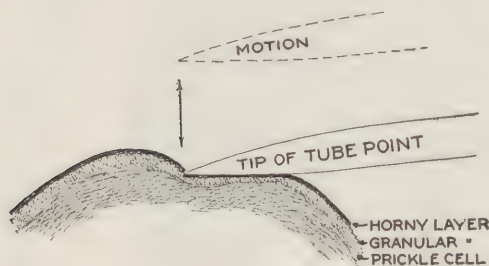
*An atmosphere of cheerfulness.*

Earl Street at Indian Mounds Park

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# New, Improved Mulford Tube-Point

*Ideal for vaccinating by multiple pressure method, as recommended by the U. S. Public Health Service*



**T**HIS NEW MULFORD TUBE-POINT embodies still further improvements over the original Tube-Point as a container for Smallpox Vaccine.

It is made entirely of glass, in one piece, with the vaccine virus hermetically sealed in the tube.

The glass point may be used for vaccination by the scratch method, or the puncture method, as well as the multiple pressure method.

The point being of glass avoids all semblance or suggestion of a surgical operation, thus avoiding alarm and fear on the part of the patient.

No needles or other forms of scarifiers are necessary—nothing to handle but the Tube-Point itself, thus permitting of rapid vaccination.

The activity and purity of Mulford Smallpox Vaccine Virus is assured by extreme care in preparation, proper aging and rigid testing at every step in the process.

The combination is ideal—a thoroughly reliable vaccine virus in a ready-to-use container.

The only vaccine "point" licensed by the U. S. Government.

*Write for circular describing Multiple Pressure Method*

NOTE.—Mulford Smallpox Vaccine is also available in plain capillary tubes.

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The house of Johnson & Johnson, of New Brunswick, New Jersey, has established a reputation for excellence in all their products that may well be envied by all business and professional men. The beauty of even their containers, say, of a package of lubricating jelly or a roll of antiseptic cotton, gives the user a real joy, which passes over from the container to the product contained. This advance assurance, so to speak, is always a delight to the physician, for it often removes anxiety about the quality of the thing he is using or prescribing. All their products are of the high quality.

## POISON FROM PLANTS

At this time of year many persons are poisoned by contact with such plants as the poison ivy, oak, sumac, etc.; and often a case of such poisoning is very difficult to relieve, besides being very painful. Campho-Phenique gives relief at once and generally complete cure in most cases in a few applications. It is put up in liquid and powder form and in small and large-sized packages.

Physicians will make grateful patients by advising all who go into the country to take along a package of Campho-Phenique. It is an excellent household remedy.

## THE MOUNDS PARK SANITARIUM

The Mounds Park Sanitarium of St. Paul occupies a beautiful building overlooking Mounds Park, so named from the famous Indian Mounds which are the characterizing features of the park, and from which a gorgeous view of the Mississippi River is obtained.

This is the beautiful setting of the Sanitarium, which is especially equipped for the treatment of mental diseases. It has a staff of consulting physicians and surgeons; a staff of specially trained nurses from its own training school; and it has facilities for giving hydrotherapy and occupational therapy. And, perhaps above all, the institution is permeated by an atmosphere of cheerfulness, the outcome of cheerful team-work in an environment of cheerfulness.

A cordial invitation is extended to all physicians to visit Mounds Park Sanitarium.

## WHAT LAXATIVE?

The perfect laxative for all conditions has not been found, but the requirements of a laxative in pregnancy, for instance, are well known and are well set forth in an announcement on another page by the Angier Chemical Co.

The requirement of an "admirable" laxative at such time are, manifestly enough, one that places the least or no strain on the muscular function of the intestines, produces no intestinal irritation, no disturbing influence on the uterus, no ill effects on the infant; and one that sufficiently lubricates the bowels and replenishes the mother's depleted amount of calcium common at this period and needing this replenishment for its sedative effect upon the nervous system.

Angier's Emulsion has amply demonstrated its usefulness in these conditions, as a trial bottle or two will convince any physician, and such trial bottles the Angier Company (Boston, Mass.) will be pleased to send free to any physician.



## THE DOCTOR AND THE STATE FAIR

A State Fair is a form of civic advancement that deserves the encouragement of every physician, and we cordially recommend to our readers that they speak a good word this year for their respective fairs, encouraging parents and children to attend these splendid opportunities of getting together by country and city people who are mutually interested in the activities of each other. Minnesota and the Dakotas will especially have great exhibits this year; and the managers of these gatherings will appreciate, more fully perhaps than medical men realize, the co-operation of physicians whose influence in such direction is potent.

## MULTIPLE PRESSURE VACCINATION

At the Washington meeting of the American Medical Association, last May, one of the features which attracted a great deal of attention in the scientific display was the demonstration of the multiple pressure method of vaccination against smallpox, by Dr. J. P. Leake, of the United States Public Health Service.

In order to make it applicable to this multiple pressure vaccination, the Mulford Vaccine Tube-Point has been improved and modified, so that it is now ideal for this method. The Tube-Point, as is generally known, is a combined sterile container and vaccinating point, all in one piece of glass and is, in fact, the only vaccine "point" now licensed by the United States Government.

A circular giving further information regarding the multiple pressure method of vaccination and the improved vaccine Tube-Point may be obtained free of charge by addressing H. K. Mulford Company, Philadelphia, and mentioning this publication.

## BEDTIME NOURISHMENT

It is a well-known fact that the administration of suitable nourishment just before retiring is very effectual in inducing natural, restful sleep, and this applies particularly in the treatment of insomnia and many extremely nervous conditions.

A food-drink that is palatable, easily digested, rapidly assimilated and particularly appropriate for nourishment at the hour of retiring may be quickly prepared from any of the following formulas:

Mellin's Food	4 level tablespoonfuls
Water	$\frac{1}{2}$ coffee cup
Milk	$\frac{1}{2}$ coffee cup

Place the directed quantity of Mellin's Food in the cup; then add the milk and water previously heated to the boiling point. Drink slowly while hot.

Mellin's Food	4 level tablespoonfuls
Water	$\frac{7}{8}$ coffee cup
Cream	$\frac{1}{8}$ coffee cup

Place the directed quantity of Mellin's Food in the cup; add the water previously heated to the boiling point and then add the cream. Drink slowly while hot.

Mellin's Food	4 level tablespoonfuls
Water	1 coffee cup

Place the directed quantity of Mellin's Food in the cup and then add the water previously heated to the boiling point. Drink slowly while hot. This mixture may be taken cold with equal relish and effect particularly during the warm season of the year.

# In Hyperchlorhydria



*A pleasant, effervescent granular preparation composed of carefully selected salts of Sodium, Potassium, Calcium and Magnesium in physiologically correct proportions.*

and other conditions of gastric over-acidity, Alka-Zane will afford prompt relief from distressing symptoms and restore normal alkaline balance.

Diuretic and antacid, Alka-Zane is indicated wherever the alkali reserves are unduly depleted, as in intestinal disturbances, rheumatic affections and certain anaphylactic manifestations.

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The Benson Optical Company of Minneapolis, with branch houses in Duluth, Aberdeen, LaCrosse, Bismarck, and Eau Claire, are exclusively wholesalers of optical goods, whether they manufacture or import the goods and they aim to give the best possible service to the medical profession in the territory reached by their home house and branches. They carry the highest quality and latest styles of optical goods, especially of glasses; and they will co-operate in every possible way with physicians in this territory who need quick service and a knowledge of physicians' needs in this line.

They will esteem it a privilege to have an opportunity to serve our readers; and they invite correspondence and personal calls by physicians at any of their offices.

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Mr. Anderson and his associates have been engaged in the surgical and hospital supply equipment business for many years, and they are now prepared to co-operate with physicians, clinics, and hospitals in filling their orders,—however small, however large.

The Anderson Company also carry all brands of hay fever antigens and biological products, all perfectly fresh and supplied promptly. Hay fever tests are furnished free on request.

The Company believe they can render a service that will be appreciated and they invite personal calls upon or correspondence with their house. Even a few moments spent in their rooms at 212-214 South Seventh Street, Minneapolis, will give one information of interest.

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## MUDCURA SANITARIUM

The Mudcura Sanitarium is located at Shakopee, Minn., twenty miles from the Twin Cities, and is reached by train and bus. This institution occupies a modern fire-proof building of 125-bed capacity, and is conducted along strictly ethical lines.

Dr. H. P. Fischer, a member of the Minnesota State Medical Association, is the Medical Director, and Dr. H. E. Wunder is the House Physician and is a graduate of the Medical School of the University of Minnesota. Dr. Fischer is a Michigan graduate.

At the Mudcura Sanitarium diseases requiring quick and effective elimination are benefited or cured in an astonishing large percentage of the cases treated.

Dr. Fischer invites correspondence.

## THE SWEDISH HOSPITAL

This hospital is a good type of the work done by the medical profession and a group of Christian laymen in the Northwest, the hospital furnishing the medical men of its staff the means of doing hospital work for their private patients and furnishing the church a means of doing a service for which it stands, doing it in so unostentatious a manner that few people really know of it.

The Swedish is a modern general hospital of 250-bed capacity with a Training School for Nurses, a Radium service and X-Ray and Pathological Laboratories.

The staff of the Hospital is composed of a large group of Minneapolis specialists, as well as general practitioners, who stand for the ideals that make the atmosphere of the institution an atmosphere of service.

An efficient Superintendent of years of successful hospital experience directs the whole organization, and he always stands ready to give the public full information concerning any thing about the hospital of interest to them.

## THE MONROVIA CLINIC

The Monrovia Clinic is composed of a group of well-known specialists who believe the climate of California in the foot-hills of the mountains at Monrovia is especially adapted to the treatment and cure of all forms of tuberculosis, as well as asthma, bronchiectasis, chronic bronchitis, and other chest diseases.

The modern methods of treatment of these diseases that have been accepted by the leaders of different countries are provided by this Clinic.

Of the multitude of remedies that are recommended for hay fever, clinical experience has shown that the following prescription is one of the best and most effective the physician can employ for the controlling of the symptoms of this distressing affection:

R Adrenalin Chlor. m. XV  
Pond's Extract dr. I to II  
Aqua destil q. s. ad oz. I  
M et Sig. Use as a spray every hour or two.

POND'S EXTRACT CO., NEW YORK AND LONDON

## Pond's Extract Hay Fever



## DESCHIENS' SYRUP

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Your patients with anemic tendencies will benefit by taking Deschiens' Syrup. It is a drugless treatment, an excellent example of opotherapy. Prescribed a tablespoonful in water before or after each of the two principal meals.

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The patients of the Clinic are cared for in the Monrovia Sanatorium and in cottages, nursing homes, or with families in private bungalows. This variety in form of care and treatment is well adapted to the various patients who come to the Clinic.

Dr. E. W. Hayes, of the Clinic, is a University of Minnesota man, and has had wide experience in a number of climates, thus making his experience of special value to persons accustomed to our Northwestern climate.

For any desired information address the Monrovia Clinic, Monrovia, Calif.

#### THE AMERICAN DRUG & CHEMICAL CO.

The American Drug & Chemical Company, of Minneapolis, has just moved its general offices and manufacturing plant to much larger quarters at 420 South 6th St., this City. The new building is much better adapted to the needs of the Company.

This move was made necessary in order to more adequately handle the rapidly growing business of this progressive concern.

Since the Company was taken over by its present owners, several years ago, there has been a very substantial and rapid increase in the volume of its business. New and additional equipment and better facilities will enable the Company to maintain its policy of supplying products of the highest standard of purity and give prompt service to its customers.

The Company's research and experimental department is working on the development of some new products of particular interest to the medical profession. The announcement of the perfection of one of these is expected soon.

Samples for clinical study and literature on Chloro-Zol, Pariogen Tablets, and Salinos will be mailed to physicians and registered nurses on request.

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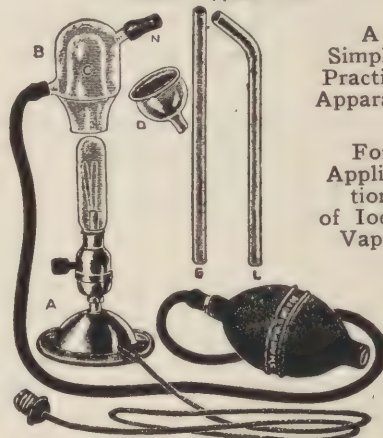
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### THE UNIVERSITY OF MINNESOTA POST-GRADUATE SPECIAL COURSES

Too much can scarcely be said of the brief post-graduate courses offered by the Medical School of the University of Minnesota beginning on Saturday, September 12, and continuing to September 24, and covering the subject of (1) Medicine; (2) Surgery; (3) Obstetrics and Gynecology; and (4) Pediatrics.

Three days will be given to each subject, with unexcelled instructors and with all the resources of the University Medical School and the hospitals of the Twin Cities. A three-day intensive study of each of these four subjects will possess an interest and a value to the general practitioner that may be, and probably will be, invaluable to him.

Circulars of information are ready to-day and may be obtained of The General Extension Division of the University of Minnesota.

### CAPROKOL

Caprokol is a germicidal with seventy times the power of the ordinary germicidal phenol (carbolic acid), the common germicidal used as a disinfectant in household, hospital, and similar work. Notwithstanding this great germicidal power, Caprokol is non-toxic in therapeutic doses, and therefore perfectly safe in the hands of the nurse or the patient of ordinary intelligence.

Caprokol is especially indicated in pyelitis, cystitis, and urethritis, and as a prophylactic after an operation or the use of instruments.

It is manufactured by the well-known house of Sharp & Dohme, of Baltimore, Md., whose name and high standing are known to all physicians.

### IN THE DIARRHEAS OF CHILDHOOD

A mild antacid and a mild laxative form a well-nigh ideal combination for meeting the conditions to be combated in dealing with the diarrheas of children. It cleanses the intestinal tract very quickly, especially by eliminating the curds that cannot be absorbed.

Such a mild antacid and mild laxative are found in Phillips Milk of Magnesia and to a degree that perhaps is known in no other form of medication. For instance, as an antacid a given quantity neutralizes four times as much acid as a saturated solution of sodium bicarbonate and fifty times as much as lime water.

Phillips Milk of Magnesia is different, and no imitation of it even approaches it in its effects.

### A PRIVATE SANATORIUM FOR PULMONARY TUBERCULOSIS

Such is the new and simple announcement made by the River Pines Sanatorium, which, as our readers know, is located at Stevens Point, Wisconsin, and has long been doing a splendid work in the treatment of tuberculosis and is now confining their work to *pulmonary* tuberculosis.

This sanatorium has an ideal location where climatic and other conditions contribute to the work of its able medical director, Dr. J. W. Coon, which is known by specialists to be of a very high order.

The River Pines Sanatorium extends a cordial invitation to all physicians interested in tuberculosis work, whether treating their patients at home or in a sanatorium, to visit River Pines and learn of its work.

The Medical Director, Dr. J. W. Coon, extends all physicians a cordial invitation to correspond with him or to visit him at River Pines.

## Calcium in Acid Form

Recent investigations (Bergeim, Jour. A. M. A., 1926, 1395), have demonstrated that an increased acidity of the gastro-intestinal contents markedly increases the solubility of calcium phosphate and facilitates its absorption.

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Manufacturers of  
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contains calcium glycerophosphate as an acid salt, so that, by its use, the prompt absorption of calcium is greatly facilitated, especially in conditions of acid-deficiency.

## THE LINCOLN HOSPITAL OF ABERDEEN, SOUTH DAKOTA

The Lincoln Hospital of Aberdeen, South Dakota, is a type of the high-grade hospitals of a capacity from 50 to 100 beds that have been built in recent years at an expenditure that is not profitable to their builders, for they have undertaken to give the public a service that is beyond the general public's capacity to pay for. And this is true of practically all private hospitals. This, in reality, is a contribution by the profession to the public, and it would be well if the public had a proper appreciation of it.

The Lincoln Hospital is connected with the Lincoln Clinic, and there is close co-operation between the two. The Hospital is noted as a standardized hospital by the American College of Surgeons, and its School of Nursing conforms to standardized requirements for entrance and graduation. Its departments and its laboratories are such as the best hospitals in the largest cities maintain.

### TO PREVENT RABIES

It is no longer necessary to send patients to Pasteur institutes for antirabic inoculations. Rabies Vaccine (Cumming) P. D. & Co., is superior in potency to the Pasteur method and may be administered by the physician in the office or at the home with no more technic or difficulty than an ordinary hypodermic injection. There is no graduation of dose; all doses are alike.

We understand that Rabies Vaccine (Cumming) P. D. & Co., is made by the method devised by Dr. James G. Cumming. A one per cent suspension of rabic brain tissue (from rabbits dying of rabies inoculated by an injection of fixed virus) is dialyzed against running, distilled water until the infectivity of the virus is destroyed.

The safety of the finished product is assured by injecting this material beneath the dura of rabbits, and subcutaneously in guinea pigs and mice. Sterility tests are also utilized to insure freedom from bacteria. The vaccine is standardized by weight so that 2 cubic centimeters of suspension, the contents of one of the syringe containers, contains sufficient material for one injection for an adult. The safety and efficiency of Rabies Vaccine (Cumming) P. D. & Co., has been amply demonstrated by its employment in a large series of cases.

Parke, Davis & Company offer a 24-page illustrated booklet "Rabies Vaccine (Cumming)," to any physician on request.

## VICTOR X-RAY SERVICE

The Victor X-Ray Corporation with headquarters in Chicago and 34 branches in the principal cities of the United States and Canada, each of which branch is in charge of a high-grade man, undertakes to give a service to the medical profession that cannot be excelled.

It is the policy of the Victor Corporation to manufacture apparatus that cannot be equalled, to put it in the offices of physicians, surgeons, and hospitals at the right prices, and to accompany it with a service that will be so helpful to the medical man that he cannot fail to obtain the best possible results from the use of the apparatus he has bought. The professional part of this work is for the doctor; the mechanical part is for the expert mechanic of the Victor Corporation; the combination cannot fail to mean success to the limits possible.

On another page of this issue the Victor Corporation gives some interesting views of the apparatus installed by the Corporation in the new Midway Hospital of St. Paul, and also speaks of the service that accompanies each piece of its apparatus.

The Corporation issues a bimonthly folder of "Service Suggestion" that tells of their efforts to be "of service" to their patrons.

It is well worth reading when it reaches one's desk. The July-August numbers gives some suggestive illustrations of diathermy apparatus that will interest men using this form of treatment.

Mr. S. V. Cuthbert is in charge of the Minneapolis Branch of the Corporation, with offices in the Baker Arcade Bldg., and will cheerfully give our readers any information desired.

### *For Professional Service*

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The best is none too good for Intravenous use.

## ENDOFERARSAN

Double Strength Iron and Arsenic

For Quick Action

In Anemia, Chlorosis or Palagra

and for rapid improvement in blood conditions



## MARGINAL UTILITY IN INFANT FEEDING

Mead Johnson & Company have expressed in the above phrase a happy thought, that of "marginal utility," borrowed from economics. Garfield, in his great speech in the famous Chicago political convention, carried that body off its feet by the simple statement that "margins count."

The point in question is that Mead's Dextrin Maltose has marginal utility above other carbohydrates, and it is this margin that often counts most, in both the ordinary and the extraordinary case.

Mead's Policy has its marginal utility, for it keeps the infant in the continuous care of the physician, and he is continuously doing preventive work instead of curative work.

From this point of view, the physician may be increasing or decreasing the calls he makes on a given infant patient. Although the average number of calls may remain the same, the results will be noticeably different, and the margin will be on the right side if there is anything in medicine. In the last analysis, the right practice of medicine as seen in this case, which means the feeding of the infant, is in the prevention of trouble, which means the constant touch of the physician with the patient.

"Mead's Policy" is the policy of the best physicians.

## PNEUMO-PHTHYSINE CHEMICAL CO.

When a busy practitioner inspects a package of Pneumo-Phthysine he finds a label upon the package with this formula: guaiacol, formalin, methyl salicylate, and quinine, each 2.6 parts; creosote, 13.02 parts; glycerine and aluminum silicate, qs. 1,000 parts; armomatic and antiseptic oils, qs.

With this formula before him, the physician knows exactly what he is asked to prescribe, and he cannot fail to place confidence in such a formula; but it is only after much experience that he can realize how dependable this emplastrum is for reducing fever or inflammation.

## MINERAL OIL AND AGAR-AGAR

It is rarely that the medical profession has found in a simple remedy one so generally adopted as the above-named remedies for constipation; that is, a mineral oil combined with agar-agar, which the William R. Warner Company offers in their preparation "Agarol." It is free from sugar, alkalies, and alcohol, and without artificial flavoring. It does not gripe or pain or nauseate the patient, and it does not form a bad habit, as do most cathartics or laxatives. Its action is mainly mechanical; it lubricates and thus mechanically removes the bowel tendency to clog and overcome peristalsis. If not pushed to an extreme it will not leak, which is an unpleasant feature of some oil lubricants.

It is a remedy for chronic constipation that removes practically all the objections that some physicians raise to all cathartics or even laxatives.

William R. Warner & Co., Inc., of 113-123 West 18th Street, N. Y. City, is one of our oldest (established 1856) and most dependable manufacturing pharmaceutical houses in the country.

## BISMOLD IN SYPHILIS

Bismuth has attained considerable popularity in the treatment of syphilis. A new product said to represent a decided improvement in bismuth medication is being offered by Eli Lilly and Company under the name Bismoid.

Bismoid has been developed by a specially patented process through the efforts of two Indianapolis physicians, Drs. Lapenta and Reisler, working in conjunction with the research and scientific staff of the Lilly Laboratories. It is a stabilized suspension of colloidal bismuth metal in a sterile glucose medium. The colloid has specific properties that are distinctive. Diffusion throughout the organism is rapid. It does not combine with other bodies and is, therefore, less toxic. The local and general tolerance is said to be good. It is claimed that there need be no fear of accumulation.

Bismoid is injected intramuscularly. The therapeutic dose is smaller than that usually prescribed

# ANIMASA

Registered Trade Mark

## IN ARTERIOSCLEROSIS

Animasa is a treatment directed at the cause. An organic remedy used with successful clinical results both here and in Europe. Also indicated in Hypertension and as a prophylactic.

Write for facts you should know.

Animasa Corporation  
109 W. 57th St., New York

## Pond's Extract

Pond's Extract, freely used full strength, with vigorous rubbing to the muscles of the back, shoulders and limbs will give gratifying relief from the pain and lameness that often come from excessive or unusual exercise and exertion. For this reason medical men have long recommended its use by those who engage in outdoor sports. Many a physician knows how agreeable is a rub-down with Pond's extract after a shower bath.

POND'S EXTRACT CO. New York and London

## Following Exercise

# TREPARSOL

Meta-amino-para-oxy-phenyl-arsonic acid

Oral treatment of  
amebiasis and syphilis.

Literature from

George J. Wallau, Inc.  
6 Cliff St., New York

for bismuth compounds and does not cause abscesses. There is no danger of fat embolism. Clinical improvements have been quite marked in tertiary syphilis. There are apparently no complications. The product is offered through the drug trade in boxes of six ampoules.

Literature is available on request. Address Eli Lilly and Company, Indianapolis, Indiana.

#### KALZAN

Kalzan is the standard form of prescribing lime. Kalzan has a definite chemical composition, double salt of calcium and sodium lactate, and a sufficient amount of sugar and milk sugar for flavoring. Free from the drawbacks of other lime salts, Kalzan has the advantages of palatability, being easily soluble, and also the advantage of increased retention on account of the sodium radicle which raises the alkalinity of the blood.

Recent investigations in calcium metabolism unmistakably show that lime assimilation can be remarkably increased if a suitable preparation is used and properly administered.

In rickets, tetany, pulmonary and other hemorrhages, tuberculosis, Graves' disease, dental caries, urticaria, calcium has been successfully used by the medical profession also as an addition to the diet of growing children, and during pregnancy and lactation.

Heretofore Kalzan could only be obtained by special import from abroad, a matter of considerable uncertainty and delay, which is now being remedied by the establishment of a central distributing agency in this country, known as The Wulfin Company, in New York City.

#### "BEWARE THE SNEEZE"

Thousands of cubic feet of air, laden with dust and bacteria, must be filtered through the nose daily.

Excepting the sphenoid, all of the sinuses empty into the spaces under the turbinate bones. The outlets of these sinuses must be kept open.

Congestion due to colds, infection, toxæmia, irritants and dried secretions close them and prevent drainage.

V-E-M, an efficient, soothing, highly bactericidal compound of richly ozonated terebinthinated substances with neutral hydro-carbon base, applied high up in the nasal fossæ opens up the breathing space by constricting the large venous vacuoles thereby rapidly reducing congestion. Removes irritation by a flood of normal mucus and gives prompt and prolonged relief.

#### "LET V-E-M PROTECT YOU"

Discourage careless nasal douching. Infectious material may be flushed from a septic focus and lodged in a normal sinus or middle ear through the Eustachian tube, causing serious complications. Always recommend V-E-M as a protective to the mucosa after cleansing.

V-E-M is indicated in the treatment of Cold-in-the-head, Catarrh, Rhinitis, Coryza, Hay Fever, Influenza, and Sore Throat.

#### IN HAY FEVER AND ROSE COLD

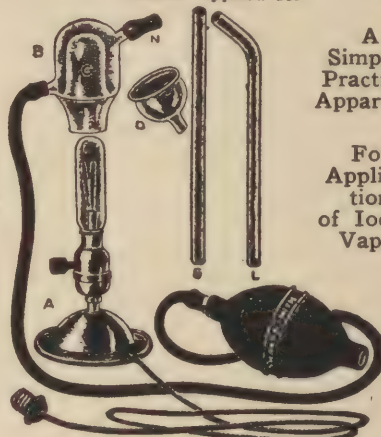
V-E-M will afford a cooling, soothing mechanical protection for the inflamed membranes of the head against the misery caused by pollen and dust. V-E-M is compact, easy to carry, and convenient to use with no liquids to spill nor bottles to break. Sixty cents a package at any drug store. Schoonmaker Laboratories, Caldwell, New Jersey.

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DOSE: One to two capsules three or four times a day. x x x

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## THE DIPHTHERIA PROBLEM

The health record in a number of sections show an increased number of diphtheria cases this year over recent years, and this in spite of the large number of individuals immunized with Toxin-Antitoxin Mixture Treatment.

The probabilities are that, had it not been for the vast amount of immunizing work done, these sections would be suffering from a severe epidemic of diphtheria this season.

The present situation reminds us, therefore, of the importance of pressing with increased vigor the campaigns for diphtheria immunization.

In the meantime, the patients suffering with diphtheria, and the contact cases, will be treated with Diphtheria Antitoxin in the usual manner, and for this purpose, the product which enjoys the widest preference among physicians is the Super-Concentrated Diphtheria Antitoxin, as originated and supplied by the Mulford Laboratories."

The features of this antitoxin are usually summed up in the words "less bulk—less pain—quicker results," although it offers additional important advantages. This Super-Concentrated product is truly the last word in antitoxin production and yet costs no more than ordinary antitoxin.

### GUDE'S PEPTO-MANGAN

It is a common, indeed, a well-nigh universal, complaint on the part of the graduates of our medical schools that they learn little of therapeutics in the schools. Perhaps it was a fault of the schools of thirty years ago that the medical students of that day were taught too much of this subject. It is, however, a remarkable fact that the medical graduate of a third of a century ago learned the value of practically all the drugs in general use to-day; and not a few of the formulæ of yesterday are in constant use to-day. Take, for instance, Dr. Gude's Pepto-Mangan, which combines ferruginous and manganic elements in a tonic form especially indicated in chlor-anemic patients. This formula has stood the test of time so well that it is probably

more generally prescribed to-day than ever before, notwithstanding the fact that the modern tendency among physicians is to prescribe less medicine than in former times. They now prescribe the drugs that have stood the test of time, and Pepto-Mangan is one of them.

Gude's Pepto-Mangan is put upon the market by the M. J. Breitenbach Co., of New York City.

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**We Pay 2½%  
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**Pond's Extract**

Pond's Extract, freely used full strength, with vigorous rubbing to the muscles of the back, shoulders and limbs will give gratifying relief from the pain and lameness that often come from excessive or unusual exercise and exertion. For this reason medical men have long recommended its use by those who engage in outdoor sports. Many a physician knows how agreeable is a rub-down with Pond's extract after a shower bath.

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**Following  
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Meta-amino-para-oxy-phenyl-arsonic acid

Oral treatment of  
amebiasis and syphilis.

Literature from

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## FREE RADIOTHERAPY INSTRUCTIONS

Many physicians have grasped the importance of radiotherapy and under proper supervision are giving their patients treatments at home.

Every physician is not born to, nor does every physician have the facilities for, major surgery; but every conscientious doctor can readily obtain and apply radium when indicated. The Murphy Radium Service not only rents radium at a very moderate fee but also, without extra cost, has special therapists supervise each application. Thus the busy practitioner is spared both years of special preparation and a huge investment.

Physicians who express an interest will be furnished complimentary copies of authoritative but brief X-ray and Radium journals by the Murphy Radium Service located at 602 Nicollet Avenue, Minneapolis.

## SECRETOGEN ELIXIR IN INFANTILE DIARRHEA

Not all the results of antiseptic intestinal therapy are satisfactory since often they destroy not only the enemy microbes but also the friendly ones. However with Secretogen Elixir (G. W. Carnrick Co.) there is no danger of detrimental effects. It stimulates the gastrointestinal tract to more vigorous function and lessens any existing toxemia.

When the mechanism producing gastric or duodenal secretion breaks down, then it is that there is established a functional digestive disorder. For the relief of this there is nothing to compare with extracts made from gastric or duodenal mucosa or from a combination of both. Organotherapy, by supplying to a diseased or imperfectly functioning organ the structural material from which the organ is made, may give the organ a chance to recuperate.

Elixir Secretogen presents the homostimulative principles of the gastric and duodenal mucosa with 1/10 of 1 per cent HCl. It is a physiological stimulus to the stomach, pancreas, liver and intestinal glands. It is a most powerful excitant of gastrointestinal secretions.

This Elixir may be given to infants under six months in ten to twenty-drop doses, diluted in water, while the dose may reach as much as one teaspoonful, depending upon the age and the conditions present. In this class of cases it is best to give five to ten drops every fifteen minutes in cool water.

*For Professional Service*

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DYSMENORRHEA  
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METRORRHAGIA  
ETC.**

ERGOAPIOL (Smith) is supplied only in packages containing twenty capsules.

DOSE: One to two capsules three or four times a day. < < <

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ENDO  
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Formula  
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The best is none too good for Intravenous use.

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Double Strength Iron and Arsenic

For Quick Action

In Anemia, Chlorosis or Pellagra  
and for rapid improvement in blood conditions

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For informative  
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INTRAVENOUS PRODUCTS CO. OF AMERICA, INC., 239 Fourth Ave., New York, N. Y.



## PUBLISHER'S DEPARTMENT

### THE AUTOCRAT OF THE BREAKFAST TABLE

It is a custom—and a delightful one—among houses that have extensive commercial and semi-professional dealings with medical men to send their patrons an occasional souvenir as a reminder that the relations between the profession and such business houses are pleasant to the latter. Among the really attractive and worthwhile mementos of this kind that have reached our table is a brief pamphlet giving an account of a breakfast or a banquet on April 12, 1883 to the "Autocrat" by the medical and literary men of New York City at Delmonico's.

The portraits of over 200 of the prominent New York physicians and literary men who attended this banquet are given, and they form a very notable group of men.

This interesting souvenir of a great event was gotten up by the Messrs. Johnson & Johnson, of New Brunswick, New Jersey, and they can spare a few additional copies, which they will send gratis to any physician desiring one.

#### GLIX

When a certain percentage of the alcohol was Volsteaded out of beer it injured neither the taste nor the tonic values of the barley malt and hops that made beer of any medicinal value; and the physicians of the Northwest who once prescribed beer for convalescents and for nursing mothers or even as a pure beverage, find in Glix a perfect substitute for beer.

Glix is brewed, fermented, and fully aged just as beer was, and many persons find it more desirable as a drink. It is made by the Gluck Brewing Company of Minneapolis.

### A HIGH- GRADE PHARMACY

When the Marquette Pharmacy opened its doors several years ago in Minneapolis, at the corner of Marquette Avenue and Seventh Street, the medical men of Minneapolis and the Northwest had reason to believe from the personnel of the group of trained pharmacists who backed the enterprise that a model pharmacy would be conducted, and to-day it can be truthfully said that such a pharmacy has been conducted from the start.

Pure drugs and absolute accuracy in compounding them have assured both the physician and the layman that they were getting what their prescriptions called for; and such assurance is gratifying both to the physician and the patient.

### THE OCONOMOWOC HEALTH RESORT

Twenty years ago Dr. Arthur W. Rogers, a graduate of Rush, founded the Oconomowoc Health Resort for the treatment of nervous and mild mental cases under conditions most conducive to the success of the undertaking. A natural park of fifty acres was selected in the finest part of Wisconsin, and a building was erected with only one end in view, namely, the welfare and comfort of the patients to be treated. The skill of a modern architect was directed to plan such a building, and from the beginning the number of patients to be received for treatment was so limited as to guarantee each patient the personal supervision of a resident physician.

The Resort is a home for the mentally sick, designed to effect their speedy, perfect, and permanent cure; and these ends are sought by the scientific methods of modern medicine.

Dr. Rogers is Physician in Charge and has associated with himself Dr. James C. Hassall, Medical Superintendent, and Dr. Frederick Gessner, Assistant Physician.

## Calcium in Acid Form

Recent investigations (Bergeim, Jour. A. M. A., 1926, 1395), have demonstrated that an increased acidity of the gastro-intestinal contents markedly increases the solubility of calcium phosphate and facilitates its absorption.

## ESKAY'S NEURO PHOSPHATES

### SMITH, KLINE & FRENCH CO.

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Established 1841

Manufacturers of  
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contains calcium glycerophosphate as an acid salt, so that, by its use, the prompt absorption of calcium is greatly facilitated, especially in conditions of acid-deficiency.

## HOW TO APPLY ANTIPHLOGISTINE

In pneumonia the best results from Antiphlogistine are obtained when it is applied hot over the entire thoracic wall from the clavicles to the lower rib, posteriorly, laterally, and anteriorly, and not less than  $\frac{1}{8}$ " thick. We urge this method of application as it has been used for almost thirty years, and we believe that it cannot be improved upon.

The statement sometimes made by physicians that the weight is objectionable for the reason that it interferes with respiration, is unsound in theory and is not borne out by clinical observation. The immediate and gratifying relief from dyspnea and cyanosis when Antiphlogistine is applied proves that the contrary is true. By dilating the capillaries and increasing the capacity of the superficial blood vessels the engorged lung is to a certain extent depleted, and the heart is relieved from an excessive blood pressure. The distressing symptoms subside, which clearly shows that the weight of Antiphlogistine is not a factor worthy of consideration.

### *Attention*

*When writing  
Advertisers  
please mention*

The JOURNAL-LANCET

## ORAL TREATMENT OF SYPHILIS

It is increasingly evident that there is a large field for an effective oral treatment for syphilis. Until the advent of the pentavalent arsenical Treparsol (Meta-amino-para-oxy-phenyl-arsonic acid) treatments have been largely by injection. It appears that there are quite a number of instances where ampoule medication is contra-indicated, inconvenient or objectionable and in such instances oral treatment by means of Treparsol meets the need. If you are interested and desire literature, please address George J. Wallau, Inc., 6 Cliff St., New York, N. Y.

## THE MINNEAPOLIS SANITARIUM

The Minneapolis Sanitarium is one of a considerable number of so-called cottage sanitariums that come into existence in most larger cities to meet a specific and well-defined need felt by the medical profession. They find location in the costly residences of yesterday whose occupants have moved on to a more fashionable residence district.

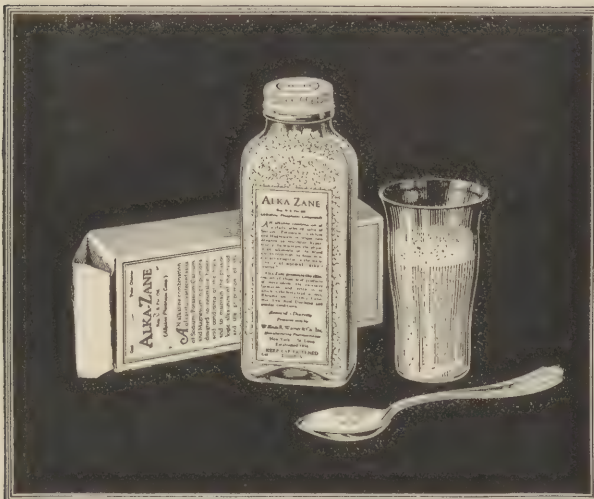
The institution of this kind that stands the test of a few or a considerable number of years, is a help to medical men, as well as to a well-defined class of patients.

Such an institution is the Minneapolis Sanitarium under the management of J. J. Baker, with Dr. W. A. Jones as Medical Director, and Dr. O. Kittleson, Associate. It receives mild mental and nervous cases and a limited number of selected drug addiction cases.

It has stood the test of years of work under the present management, and well meets the needs of the classes of cases above named.

It is located at 1500 Elliott Ave., Minneapolis.

# When the buffer bodies are depleted



*A pleasant, effervescent granular preparation composed of carefully selected salts of Sodium, Potassium, Calcium and Magnesium in physiologically correct proportions.*

as in acidosis, acidemia and their correlated pathological disturbances, rational alkaline medication is essential.

Alka-Zane containing alkaline salts in proportions adapted to the physiological requirements of the body, promptly corrects hyperacidity, promotes diuresis and the restoration of the all-important alkali reserve.

*A trial will demonstrate the outstanding merits of*

# ALKA-ZANE

*Literature and samples to physicians*

**William R. Warner & Co., Inc.**

*Manufacturing Pharmacutists since 1856*

**113-123 West 18th Street**

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## PUBLISHER'S DEPARTMENT

### RHEUMATISM

It is not claimed that Antiphlogistine cures rheumatism, but hundreds of cases reported by physicians justify the statement that as an analgesic, palliative adjuvant in these cases, it is the most efficacious local treatment that can be used.

### FOR THE DOCTOR'S LEISURE HOUR

Mr. Arthur W. Isca, the well-known medical book dealer, of Minneapolis, opens his fall announcement, which will be found on another page, with a list of a half dozen books for the "Doctor's Leisure Hour," beginning with "A History of Medicine" and ending with "Mental Handicaps in Golf." Surely, this is a good half dozen books for the leisure hours of the coming winter, and Mr. Isca will add other lists from time to time which will be worth while. Watch for them, or ask Mr. Arthur W. Isca, 210 South Seventh Street, Minneapolis, for them.

### THE WALMAN OPTICAL CO., INC.

The Walman Company, of Minneapolis, with branch houses in St. Paul and Grand Forks, are manufacturing and dispensing opticians, and have extensive dealings with physicians who need optical instruments and supplies.

They seek this line of business in perfect confidence that they can render physicians a service that will be both satisfactory and profitable to such professional men.

The Walman Company will be glad to have physicians call upon any of their offices or to give the

fullest information by mail concerning any of the problems that present themselves to physicians in this line of work.

### ZORAX

The C. F. Anderson Co., Inc., of Minneapolis, desire to call attention to "a new standard of Excellence" infra-red lamps, which they announce on another page. An infra-red lamp in a floor stand model sells for \$25.00, and will not fail to give general satisfaction. Its work is guaranteed by the Anderson Company, wholesalers in surgical and hospital equipment, at 212-214 Seventh Street South (Elks Building—ground floor), where they desire physicians and surgeons to call and look over their display.

### HORMONES

In the work of metabolism the hormones contributed by the various ductless glands (the endocrine chain) play the chief rôle. The hormone of the suprarenal gland is credited with two distinct functions; it stimulates the glycogenolytic function of the liver, and it either stimulates the sympathetic system of nerves or duplicates the effect of such stimulation on the body.

This hormone is known among physicians everywhere as Adrenalin. It is the first hormone ever isolated from any of the glands of internal secretion. Parke, Davis & Co., who discovered it on the advent of the twentieth century, gave it the name Adrenalin, signifying its derivation from the adrenal or suprarenal glands.

In order to make sure of obtaining the original product, physicians are advised to designate it by its original name—Adrenalin.

## Fifty Times Tested

More and more the modern clinician appreciates the profound physiologic importance of calcium and phosphorus. More and more, too, he is insisting that these elements be administered in their most absorbable form and in a state of exceeding purity.

## ESKAY'S NEURO PHOSPHATES

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Established 1841

*Manufacturers of  
Eskay's Food  
Eskay's Suziphen*

contains calcium and phosphorus as a calcium acid glycerophosphate, their most soluble and absorbable form. Moreover, its ingredients are subjected to 50 tests for identity, purity, quality and strength, and every lot of the preparation is standardized to insure absolute uniformity.



## The Clinical Response Demonstrates

The formula tells the physician WHY this emplastrum is effective.

The clinical response demonstrates that

*Pneumo-Phthisine*  
TRADE MARK

is the physician's regular resource in the reduction of fever temperature.

You can prove that the medicaments in the emplastrum are absorbed by observing the effects about thirty minutes after the application.

Sample and literature on request.

**PNEUMO-PHTHYSINE CHEMICAL CO.**  
Dept. J. L., 220 W. Ontario St. CHICAGO

### FORMULA

Guaiacol 2.6. Formalin 2.6.

Creosote 13.02. Quinine 2.6

Methyl Salicylate 2.6.

Glycerine and Aluminum Silicate, qs 1000 parts.

Aromatic and Antiseptic Oils, qs

## EXHIBIT OF THE PHYSICIANS AND HOSPITALS SUPPLY CO. OF MINNEAPOLIS AT THE AMERICAN HOSPITAL ASSOCIATION MEETING

They will have four booths totaling an approximate fifty-foot frontage on the main floor of the exhibit where they will attempt to feature the line in general and especially items which they manufacture, and also those for which they are exclusive distributors in this territory.

They will display their P. & H. special bedside table with adjustable disappearing serving tray, which is being standardized on by a number of new hospitals which have been recently equipped, and also which are gradually replacing other types in other hospitals. They will show this table with both an acid-proof porcelain enameled top with a sheet steel tray or the same with a monel metal tray. They also make this table with a monel metal top, and supply the table in various finishes, such as white enamel, grained walnut, grained mahogany, etc.

They will also feature the Perfection Breast Pump, the Kny-Scheerer and Scanlan-Morris Operating Tables, the Scalytic Operating Room Lamp, which is proving so indispensable to hospitals on account of the absence of shadows and the economy of use. They will also feature the Benedict-Roth Metabolism Apparatus, their especially constructed P. & H. wheel stretcher with detachable litter and other items of equipment of their own manufacture.

They will also have a Physiotherapy display, including Deep Therapy Lamps, Alpine Sun Lamps, and Diathermy. They will have a separate booth for their drug specialties, as well as items of other manufacture, such as chemicals, intravenous ampoules, etc.

In another booth, they will display their special sheeting, rubber goods, steel instruments, enamelware, and all the other miscellaneous items used by hospitals, including sutures, paper products, glassware, rubber goods, dressings, etc.

Every item they display will be of decided interest to those in attendance.

They will also feature a new Cysto-Urography Table designed by Dr. Foley, of St. Paul, which is operated electrically. This is the first table of its type ever put out, and it will be the first time this table has been on display.

On account of lack of space in exhibit booths, they will have an auxiliary exhibit in their own spacious showrooms in their new building, 414 South Sixth Street, which is not far from the Auditorium. Here they will display all other items of equipment, including Hawley Fracture Table, miscellaneous cabinets, nurses desks, wheel chairs, tables, food carriages and other operating tables, and a number of other items.

This exhibition will be attended by hospital superintendents, nurses, and doctors from all over the country and Canada, and it is this company's intention to prove to out of town visitors from other sections of the country, that the Northwest has a Physicians and Hospitals Supply Company which is equipped to take care of the complete requirements in the entire territory in every phase of the field. They hope to make a large number of new connections with customers in the East, South, and far West.



## LILLY'S LATEST BULLETIN

Bismoid, the new Lilly colloidal bismuth metal product for the treatment of spirillary especially syphilis, is one of the leading articles in Physician's Bulletin, No. 59, just issued by Eli Lilly and Company.

Bismoid has been developed by a patented process by Drs. Lapenta and Reisler, two Indianapolis physicians, collaborating with the Lilly Scientific Research Laboratories.

The advantages claimed for the colloid are its permanency of suspension, its regular and optimal rate of absorption, its small individual and total effective dosage of bismuth metal, its marked alterative and curative powers, and its apparent freedom, thus far, from danger and from local or systemic complications.

Particularly timely are the contributions on diphtheria prevention and smallpox vaccination. Every physician should welcome the description of the vaccination procedure now recommended by the United States Public Health Service. The method, known as the "multiple pressure or prick" method is more rapid than any other safe and effectual method; the results even more satisfactory, when a potent virus is used; and there is no ugly scar. The latter fact, however, may lead to misinterpretation of a subject's state of immunity unless the physician, health officer, or nurse knows the "sanitary dimple" and appreciates its significance. Physicians who have adopted the method frequently find that their certificates of successful vaccination are disregarded by another inspector who still attaches undue importance to disfiguring, scarifying scars.

A pertinent discussion of diabetic coma and its treatment with Iletin (Insulin, Lilly); of Pulvules Amidophen, Lilly, for the relief of pain, temperature reduction and sedation; the very practical soluble Sulphate Salt of Ephedrine complete a bulletin

which, it is believed, will be of interest to all physicians.

If you have not received your copy or wish additional ones we can offer the assurance that Eli Lilly and Company will be glad to see that you are supplied if you will address them at Indianapolis, Indiana.

## ELECTROLYSIS FOR THE REMOVAL OF SUPERFLUOUS HAIR, MOLES, WARTS, ETC.

Electrolysis as an agency for the permanent removal of superfluous hair, warts, and moles has been recognized by the highest medical authorities as the only safe, sane, and sure method.

The blemishes most commonly eradicated by electrolysis are superfluous hair, warts, and moles. These are very embarrassing blemishes for any lady, and through the use of the electric needle in the hands of a skillful and expert operator these disfigurements may be permanently removed with little, if any, scar to denote their former existence. The process is practically painless.

The operation is very delicate and requires a skillful and experienced operator. It takes time, patience, and experience to learn just how much current to use on each individual and each particular skin, so that the hair root can be destroyed and not the surrounding tissue.

Bear in mind that scars and unsuccessful results from the use of the needle are not the fault of the electricity, but of the operator.

We do not denounce dentistry on account of some poor dentists, nor the oculist because there are many poor ones. The same principle applies to electrolysis.

Be sure to have a competent electrologist.

A. B. Willison, 343 Loeb Building, Minneapolis, is such an expert, and has had wide experience in the use of multiple needs for this work.



## DESCHIENS' SYRUP

Of Hemoglobin

Your patients with anemic tendencies will benefit by taking Deschiens' Syrup. It is a drugless treatment, an excellent example of opotherapy. Prescribed a tablespoonful in water before or after each of the two principal meals.

Samples and Literature

GEORGE J. WALLAU, Inc.

6 Cliff St., New York, N. Y.

# ANIMASA

Registered Trade Mark

Animasa Corporation

In the majority of cases of  
**ARTERIOSCLEROSIS**  
and **HYPERTENSION**  
**ANIMASA**

has proved effective in America and Europe. Employed as a treatment directed at the cause and as a prophylactic.

109 W. 57th St., New York

## Oral Hygiene

For keeping the mouth and throat clean, wholesome, and free from dangerous germs, there is nothing more agreeable and effective than a solution of Pond's Extract—two tablespoonfuls to a half glass of quite warm water used as a mouth wash and gargle every three or four hours. If abrasions with marked pain and soreness are present, these will be promptly controlled and healing follow without delay.

POND'S EXTRACT CO.

## Pond's Extract

New York and London

## MATERNITY SANITARIUM

"The Willows" is the pleasing name of a well-conducted maternity home, which is located in a quiet section of Kansas City, Mo. (2929 Main St.). It was built to meet the needs of a very large class of unfortunate young women of the better class. It is both a hospital and a home, well managed in every respect and giving the seclusion this class of patients require. The Willows meets a real need, and correspondence concerning their work is invited, especially with physicians who know the needs of the unfortunate class seeking such a home. A 90-page illustrated booklet will be sent to any person applying for the same. Address The Willows, 2929 Main St., Kansas City, Mo.

## THE POTTENGER SANATORIUM

On another page will be found a picture of the Pottenger Sanatorium for the care and treatment of people with diseases of the lungs and throat. The picture is wholly inadequate, yet it serves to show what a splendid institution the Pottenger Sanatorium really is. It is situated in the foot-hills of the Sierra Madre Mountains, not far from the Pacific Ocean and near Los Angeles. The site is about 1,000 feet above sea level, and the climate at this point cannot be excelled. It is not too warm, not too cold, and neither too dry nor too moist. It shows an equable temperature throughout the year.

At this point Dr. F. M. Pottenger and his Staff are doing a work that is known for its high character at home and abroad.

Medical men from the Middle West, who so often visit California, are invited to inspect the Sanatorium at Monrovia or to call at the offices of Dr. Pottenger in Los Angeles.

## Attention

*When writing  
Advertisers  
please mention*

The JOURNAL-LANCET

## THE WAUKESHA SPRINGS SANITARIUM

The above-named sanitarium confines its work to the care and treatment of nervous patients, and it enjoys an enviable reputation among medical men of the central and northern states.

The equipment of this sanitarium, its location, its park-like grounds, and its buildings are well nigh ideal; and its staff is composed of men of high reputation in this line of work. They are Dr. Byron M. Caples (Medical Director) and Drs. Floyd W. Alpin and L. H. Prince.

In these days of intense nervous strain and nervous breakdowns the general practitioner does well to keep himself informed upon the work of all such institutions.

**ERGOAPIOL (Smith)**

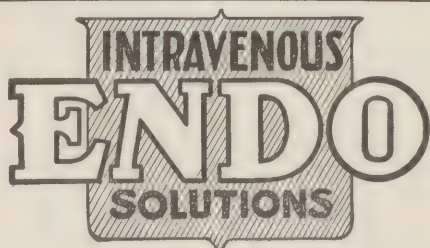
For  
**AMENORRHEA  
DYSMENORRHEA  
MENORRHAGIA  
METRORRHAGIA  
ETC.**

ERGOAPIOL (Smith) is supplied only in packages containing twenty capsules.

DOSE: One to two capsules three or four times a day. < < <

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MARTIN H. SMITH COMPANY, New York, N.Y., U.S.A.



OVAPHIN TABLETS  
for women

ENDO PRODUCTS COMPANY

## ORCHAPHRIN TABLETS

*Aphrodisiac for Men*

A tonic and alterant for the entire system, as well as an aphrodisiac. Prepared to correct underlying causes of sexual impotence. Glandular constituents of value in correcting conditions due to Hormone Dysfunction.

E A C H  
T A B L E T  
C O N T A I N S

Yohimbine Hydrochloride	1/12 gr.
Ext. Nux Vomica	3/4 gr.
Sod. Nuclenate	1 gr.
Orchic Substance	1 gr.
Pituitary Substance	3/4 gr.
Thyroid Substance	1/12 gr.
Suprarenal Substance	3/4 gr.

In bottles of 100 tablets, price per bottle \$3.00

-:-

241 Fourth Ave., New York, N. Y.





## Autumn Chills and Winter Ills

The unrivaled pain and congestion relieving properties of ATOPHAN—

And the universally recognized, ever reliable antipyretic analgesic action of Acetyl-Salicylic Acid (Aspirin)—

Conveniently combined for joint, prompt and maximal effect—

That's ARCANOL.

Made its first bow in the early Spring of 1927 and instantly came into favor for the relief and treatment of "Colds," Grippe and Febrile Respiratory Disorders in general.

With the advance guard of Autumn and early Winter cases in the offing, may we send you a complimentary trial package?

You and ARCANOL really ought to get well acquainted.

7½ grain tablets in bottles of 25 and 50  
Dosage: 2 to 4 tablets

**SCHERING & GLATZ, Inc.**

84-92 Orange Street, Bloomfield, N. J.

41-43 Maiden Lane, New York, N. Y.

## Immunity and Alkalinity



*A pleasant, effervescent granular preparation  
composed of carefully selected salts of Sodium,  
Potassium, Calcium and Magnesium in  
physiologically correct proportions.*

appear, in the opinion of competent observers, to be in close relationship. At least it is certain that alkalinity is lowered in all infectious diseases, and that excess production or defective elimination of acid products lead to a number of metabolic disturbances.

To correct these conditions, present particularly in gastric and intestinal disorders, rheumatism, gout and certain cutaneous affections, and to prevent their occurrence as a sequel to undue reduction of the buffer substances of the blood, prescribe

# ALKA-ZANE

*Literature and samples to physicians*

**William R. Warner & Co., Inc.**

*Manufacturing Pharmacutists since 1856*

113-123 West 18th Street

New York City

# Mulford ERYSIPELAS STREPTOCOCCUS ANTITOXIN (Concentrated)

## *of Specific Therapeutic Value*

**E**RYSIPELAS is a disease caused by the erysipelas streptococcus and is both toxic and bacterial in nature. Hence the importance of using in treatment a serum that possesses both antitoxic and antibacterial properties.

The combined concentration of antitoxic and antibacterial substances, as embodied in MULFORD ERYSIPELAS ANTITOXIN, is a *new achievement*.

It is produced in the Mulford Laboratories, as a result of research work done in collaboration with Dr. Harold Amoss, of Johns Hopkins Hospital, Baltimore, Maryland.

The therapeutic value of each lot is proven by clinical test and passed by Dr. Amoss before being released for the market.

DOSE.—20 cc intravenously, and repeated in 12 to 24 hours, if necessary

*Supplied in 20 cc Syringes*

*Literature on Request*

**H. K. MULFORD COMPANY**  
PHILADELPHIA, PA.



78217

# Mulford

THE PIONEER BIOLOGICAL LABORATORIES

## PUBLISHER'S DEPARTMENT

### "MEDICINES OF RARE QUALITY"

Some years ago The Hoffmann-LaRoche Chemical Works, Inc., of New York City, adopted the pleasing slogan of "Makers of Medicines of Rare Quality," and they have maintained that distinction in their work to a remarkable degree. In their product "Allonal" alone they justify the claim for a drug of "rare quality" and, it might be added, of a very rare value, a drug that has justly displaced almost a score of opiates and hypnotics that should be forever abandoned. The story of what Allonal will do is well told by the Company on another page headed "Try Allonal."

### THOMAS HOSPITAL OF MINNEAPOLIS

Thomas Hospital of Minneapolis is practically the only hospital in the Twin Cities serving tuberculosis patients exclusively. Organized twenty years ago for this purpose, it has served a real need in the community.

For several years the facilities of this institution were placed at the disposal of the ex-service men. It is now, however, open to general patronage, and any reputable physician is privileged to bring patients to it.

Thomas Hospital is under the superintendency of Mr. Jos. G. Norby, who will give any person detailed information concerning the work of the hospital.

### GASTRON

The house of Fairchild Bros. & Foster, of N. Y. City, has been known to the medical profession for over 50 years as one of our leading investigators of gastric disturbances, which confront the general practitioner, not only daily, but many times a day. The laboratories of this house have made exhaustive studies of the subject and the clinical work in this line directed by the house has known scarcely no limitations.

As the result of such research work Messrs. Fairchild Bros. & Foster confidently offer the profession Gastron, which is now very extensively used with uniformly good results.

Its literature is interesting and worth while reading.

### PRECISION X-RAY GENERATOR

The Pengelly X-Ray Company announce on another page of this issue the latest type of Acme-International Precision X-Ray Generator, which is known as the Super-Speed X-Ray Generator.

On account of the type of rectifier used, radiographs can be made with this new machine in one-half the time, with the same amount of electrical energy as on other generators, and, in addition, electrical currents over 500 milliamperes can be generated by the machine without undue stress on any of its parts.

The controls are equipped with 100-point auto-transformer control instead of the usual 30-point, which permits the operator to get the proper voltage to an exceptionally fine degree.

The generator retains all the features heretofore embodied in Acme-International Generators, such as the avoidance of corona losses and absence of nitrous oxide gases.

A written guarantee is furnished by the manufacturer, guaranteeing the transformer for life against defective workmanship and material.



## REST HOSPITAL

The Rest Hospital of Minneapolis is an old-established and splendidly organized and conducted hospital for patients in need of rest and special care, for the convalescent, and for mildly nervous cases. It is located in a fine section of the city and is under the care of two highly equipped registered nurses, N. R. Moran and Bea O'Brien, women of long experience in this institution. The Medical Directors of Rest Home are Drs. Arthur S. Hamilton and H. B. Hannah, specialists in mental and nervous diseases.

### BOTANICAL GARDENS: A BEAUTY SPOT

The experimental gardens of the Philadelphia College of Pharmacy and Science, at Glenolden, Pa., have presented a beautiful picture during the past few months. Established about six years ago, they have now reached a state of development where they are not only beautiful to look upon, but of real practical value and interest to the student of botany, particularly of medicinal plants.

The gardens are conducted in connection with the drug farms of the H. K. Mulford Company, through whose generous interest and co-operation this venture was made possible. Students of the Philadelphia College of Pharmacy and Science, as well as of other institutions, and also many other

botanists, pharmacists and physicians have been using the gardens for study in increasing numbers. More than 350 different varieties of plants are growing there.

Pharmacists and physicians visiting Philadelphia should get in touch with the Mulford Laboratories while in the city and arrange for a visit to these very interesting gardens and laboratories.

### POSTGRADUATE WORK

Postgraduate work is not only essential to every physician, but it is profitable to every physician; even more, it is due every patient that the family physician render a service that cannot be rendered without postgraduate work.

Every physician knows this. Then why say it? Simply to incite every physician to make an extra effort to increase his efficiency in the interests of the profession and of the public. Incidentally, we may also say that the Post Graduate Hospital and Medical School of Chicago (2400 South Dearborn St.) conducts its work in a manner to help physicians get the best possible results in the time at the physicians disposal for postgraduate work.

The excellence of their work can be obtained from the many Northwestern physicians who attend the school or by correspondence with or a visit to the school.

## SPLINTS

The cheapest, most adaptable and best splint is the

*Adjustable Fibre Splint*

This splint is made of wood pulp fibre and has been saturated in a solution that renders it easily adjusted by HEATING when it will become semi-plastic and will easily conform to the surfaces after which it will become firm and rigid. It is light, strong, and will not absorb septic matter, is so adaptable that it can be easily and quickly removed to allow massaging of affected parts and readjusted if necessary when replaced. Being non-metallic, X-ray pictures can be taken without removal.

For special terms and prices, write  
GEO. L. WARREN & CO.

Niles, Mich.

# Want X-Ray Supplies "P-D-Q"?

There are over 30 District Branches now established by the Victor X-Ray Corporation throughout U. S. and Canada. These branches maintain a complete stock of supplies, such as X-ray films, dark room supplies and chemicals, barium sulphate, cassettes, screens, Coolidge tubes, protective materials, etc., etc. Also Physical Therapy supplies.

The next time you are in urgent need of supplies place your order with one of these Victor offices, conveniently near to you. You will appreciate the prompt service, the Victor guaranteed quality and fair prices.

Also facilities for repairs by trained service men. Careful attention given to Coolidge tubes and Uviarc quartz burners received for repairs.

**VICTOR X-RAY CORPORATION**  
Main Office and Factory: 2012 Jackson Blvd., Chicago

Minneapolis Branch  
550-4 Baker Arcade Bldg.  
733 Marquette Ave.



**Victor X-R-P Safe**

A lead-lined steel cabinet for storing films and loaded cassettes.

Write SUPPLY SALES DIVISION for price and detailed information.

J-1.

**Quality Dependability Service Quick-Delivery**  
*~ ~ Price Applies to All ~ ~*



## The Clinical Response Demonstrates

### FORMULA

Guaiacol 2.6. Formalin 2.6.  
Creosote 13 02. Quinine 2.6  
Methyl Salicylate 2.6.  
Glycerine and Aluminum Silicate, qs 1000 parts.  
Aromatic and Antiseptic Oils, qs

The formula tells the physician WHY this emplastrum is effective.

The clinical response demonstrates that

*Pneumo-Phthysine*  
TRADE MARK

is the physician's regular resource in the reduction of fever temperature.

You can prove that the medicaments in the emplastrum are absorbed by observing the effects about thirty minutes after the application.

Sample and literature on request.

**PNEUMO-PHTHYSINE CHEMICAL CO.**  
Dept. J. L., 220 W. Ontario St. CHICAGO

### ST. LUKE'S HOSPITAL OF FARGO, N. D.

St. Luke's Hospital of Fargo, N. D., is a church hospital; that is to say, it was organized and is maintained by a church, in this case by the Lutheran Church, for the specific purpose of rendering a public service through the church and by means of the hospital.

St. Luke's has a capacity of 150 beds and is thoroughly equipped to do hospital work along modern lines. It has an x-ray department for diagnosis and treatment, a radium service, pathological laboratories, and a physiotherapy department. It also conducts a school of nursing with a curriculum adopted by the National League of Nursing Education.

Fortunate, indeed, is the city and the territory that possesses such a hospital.

### NURSES' OFFICIAL REGISTRY

The organization or registry of nurses is much more in the direct interest of physicians and the public than of the nurses, for the purpose of such registration is to separate the poor or incompetent nurse from the good and competent nurse.

This purpose is best carried out by a supervision of nurses which also considers the question of personality; and this, indeed, is a big question. Minnesota is divided into six districts, and Minneapolis is the headquarters of the Third District, with offices at 681 Curtis Hotel, where its work is carried on under the supervision of a competent registered nurse whose work is to know all registered nurses in the District and to give the physician or the family just such a nurse as the physician or the family needs and demands. Its working can be fully learned from The Nurses Official Registry, at the address given above.

### For the Doctor's Leisure Hour

Cumston—A History of Medicine	- - -	\$5.00
DeKruif—The Microbe Hunters	- - -	3.50
Dudley—The Medicine Man	- - -	3.50
Fishbein—The New Medical Follies	- - -	2.00
Browne—This Believing World	- - -	3.50
Hyslop—Mental Handicaps in Golf	- - -	1.50

### ARTHUR W. ISCA

210 South 7th St., Atlantic 6779 Elk's Bldg.  
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### For Professional Service

## Mead's Nurses Registry

MARION A. MEAD, M.D., Registrar  
871 Curtis Hotel, Minneapolis, Minn.

Thirty years experience in Nursing Service in the City of Minneapolis

Registered, Graduates and Practical Nurses  
Hospital and Office Positions Filled

Telephone—Geneva 8434

If no answer call Atlantic 4400, Curtis Hotel  
Minneapolis, Minn.



## MALNUTRITION, MARASMUS, INFANTILE ATROPHY, ATHREPSIA

The above words constitute the heading of the announcement of the Mellin's Food Company, made on another page of this issue, and they are words of warning of a condition common to infants and manifested in loss of weight and calling for immediate help. Such help may be found in a food that "creates and sustains energy," namely, Mellin's Food (8 level tablespoonfuls), skimmed milk (9 fluid ounces), and water (15 ounces).

But what is Mellin's Food? It is a food product that furnishes with milk and water the amount of carbohydrates, proteins, and inorganic elements that the best pediatricians, at home and abroad, have agreed upon as meeting the needs of children in the above conditions.

The Mellin's Food Company have always borne in mind that the scientific pediatrician, in the laboratory and at the bedside, is the best judge of the needs of the child deprived of mother's milk, and they have done their work in co-operation with the leaders among medical men whose confidence they enjoy. Read the interesting announcement referred to.

### THE NORTHWESTERN HOSPITAL

The Northwestern Hospital of Minneapolis is under the direct supervision of a group of philanthropic and public-spirited women who have given, or have induced the public to give, large sums of money for the building and maintenance of a high-grade hospital, which is also one of the largest hospitals in the city. These women have given this splendid institution its character, holding, as it were, a mandate for the public to build and maintain a hospital worthy of the great city whose ideals it represents.

These women, in turn, have earned the good-will of the medical profession and have enlisted the services of a larger group of the best men and women in the profession to form a staff to direct the scientific work of the hospital along lines that give this institution a fine reputation.

Northwestern is a complete hospital, having its work divided into ten or twelve departments, with a splendid nurses' training school and a modern pathological laboratory.

Northwestern, for a number of years, has been under the supervision of Mrs. Pearl Rexford, a highly efficient registered nurse whose training as a nurse began in this hospital.

# Bank Here

**We Pay 2½%  
Interest on  
Checking Accounts**



**THE MINNESOTA  
LOAN & TRUST CO**  
405 Marquette Ave  
MINNEAPOLIS  
Since 1883

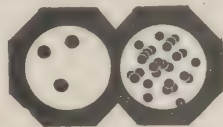
## Oral Hygiene

POND'S EXTRACT CO.

For keeping the mouth and throat clean, wholesome, and free from dangerous germs, there is nothing more agreeable and effective than a solution of Pond's Extract—two tablespoonfuls to a half glass of quite warm water used as a mouth wash and gargle every three or four hours. If abrasions with marked pain and soreness are present, these will be promptly controlled and healing follow without delay.

New York and London

## Pond's Extract



## DESCHIENS' SYRUP

Of Hemoglobin

Your patients with anemic tendencies will benefit by taking Deschiens' Syrup. It is a drugless treatment, an excellent example of opotherapy. Prescribed a tablespoonful in water before or after each of the two principal meals.

GEORGE J. WALLAU, Inc.

Samples and Literature

6 Cliff St., New York, N. Y.

# ANIMASA

Registered Trade Mark

Animasa Corporation

In the majority of cases of  
**ARTERIOSCLEROSIS  
and HYPERTENSION  
ANIMASA**

has proved effective in America and Europe. Employed as a treatment directed at the cause and as a prophylactic.

109 W. 57th St., New York

## THE SANATORIUM AND HOSPITAL OF CHAMBERLAIN, SOUTH DAKOTA

The above-named hospital and sanatorium with a capacity of 75 beds is doing a useful work in a large field, namely, the work of a general and an obstetrical hospital and of a sanatorium for mildly nervous cases. It maintains a nurses' training school, which is very essential in such an institution in order to supply its own needs and to meet the needs of the community. It also maintains a well-equipped clinical laboratory and an x-ray department; and it has three physiotherapy rooms to enable it to do modern physiotherapy work on purely scientific lines.

The Medical Directors of the Chamberlain institution are Drs. C. P. Farnsworth and R. A. Crawford.

## INTRAVENOUS INJECTION OF LEAD FOR THE TREATMENT OF CANCER

The publicity given to Blair Bell's work with lead in the treatment of cancer has prompted many investigators to experiment on the preparation of lead for intravenous injection. Bell had expressed the hope for an improvement on the solutions he employed which have been said to have lead suspensions containing fairly fine particles of lead, some of the lead hydroxide and carbonate.

Numerous preparations have been offered, all of them containing the lead held partly in suspension by sustaining colloids like gelatine, but none of them possess the finer pharmaceutical requirements of a stable solution free from particles as required for intravenous injection.

It is announced that at the Loeser Laboratory the adaptability of lead for intravenous injection has been thoroughly studied. They have developed a solution of colloidal lead hydroxide which is held in perfect solution by sustaining ions instead of particles of gelatine or proteins, and is especially well adapted for intravenous injection. When this solution is placed in a dialyzing thimble and dialyzed against distilled water, the sustaining ions diffuse into the water and the colloidal lead hydroxide

remains in the thimble. Only a small proportion of the lead diffuses. Animal tests indicate a lower toxicity than any other solution reported in the literature. It enables the clinician to administer as much as 50 mgms. of lead at one dose without causing hemoclastic reaction.

For complete information address Loeser Laboratory, 22 West 26th St., New York, N. Y.

**ERGOAPIOL (Smith)**

For  
**AMENORRHEA  
DYSMENORRHEA  
MENORRHAGIA  
METRORRHAGIA  
ETC.**

ERGOAPIOL (Smith) is supplied only in packages containing twenty capsules.

DOSE: One to two capsules three or four times a day. < < <

SAMPLES and LITERATURE SENT ON REQUEST.

MARTIN H. SMITH COMPANY, New York, N.Y., U.S.A.

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Meta-amino-para-oxy-phenyl-arsonic acid

Oral treatment of  
amebiasis and syphilis.

Literature from

**George J. Wallau, Inc.**  
6 Cliff St., New York

# ENDO SOLUTIONS

OVAPHIN TABLETS  
for women

ENDO PRODUCTS COMPANY

## ORCHAPHRIN TABLETS

*Aphrodisiac for Men*

A tonic and alterant for the entire system, as well as an aphrodisiac. Prepared to correct underlying causes of sexual impotence. Glandular constituents of value in correcting conditions due to Hormone Dysfunction.

E A C H  
T A B L E T  
C O N T A I N S

Yohimbine Hydrochloride	1/12 gr.
Ext. Nux Vomica	3/8 gr.
Sod. Nuclienate	1 gr.
Orchic Substance	1 gr.
Pituitary Substance	1/4 gr.
Thyroid Substance	1/12 gr.
Suprarenal Substance	1/4 gr.

In bottles of 100 tablets, price per bottle \$3.00

--

241 Fourth Ave., New York, N. Y.



## PUBLISHER'S DEPARTMENT

### PHYSICIAN'S AND SURGEON'S TABLE

The Noyes Bros. & Cutler Co., of St. Paul and Minneapolis, is at once one of the oldest and largest supply houses in the West, and one of the most progressive. They are ever ready to meet the wants of physicians, surgeons, and hospitals as evidenced in their generous offer, on another page, to furnish the handsome table shown there at a very low price on very easy terms of payment, such as should induce, even in these quiet business times, not a few sales of this useful and attractive piece of office equipment.

### LAVORIS

In its announcement in our advertising columns the Lavoris Chemical Co. reproduces a copy of a physician's prescription for Lavoris called for in a specific case, namely, for its use following tonsillectomy. It is as follows:

"Lavoris (original bottle).

"Sig.—Dilute one part to three of warm water. Starting second day, use as gargle every two or three hours.

".....M.D."

This prescription was given, no doubt, because "Lavoris separates tenacious mucous secretions; relieves soreness; stimulates healings; and eliminates disagreeable odor and taste."

Lavoris does these four things because it is, in the main, zinc chloride, and it was first given the profession because it is a *stable* and elegant form of zinc chloride, and wherever such a form of zinc chloride is desired Lavoris is indicated, and it will please both patient and physician.

In a word, prescribe, where indicated, zinc chloride or, better still, Lavoris.

### MEAD'S NURSES REGISTRY

For over thirty years Dr. Marion A. Mead has maintained a Registry to meet the needs of physicians and families in want of nurses; and it goes without saying that her long experience, coupled with her professional work as a physician, enables her to perform a large service well-nigh impossible to one without such training and experience.

Dr. Mead knows the "temperament" of the nurse, the need of the family where sickness exists, and the demands of the physicians.

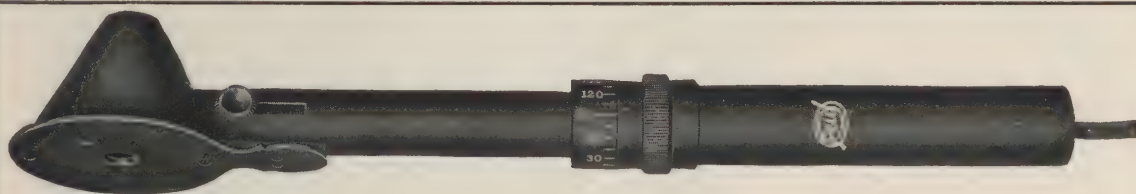
Her Registry is thoroughly dependable. Her office is 871 Curtis Hotel; telephone, Ge. 8434.

### THE ANTITOXIN IN THE SERUM

We speak of antitoxic serums, or antiserums, as the equivalent of antitoxin; but the serum simply contains the antitoxin, and along with it certain other ingredients that it has been the object of biologic research for the past thirty years to get rid of. These are, so far as known, albumins and euglobulin. The former have been separated, to a large extent, from the antiserums, but the antitoxic principle is very closely linked with a globulin or a pseudoglobulin so that separation of these has been found extremely difficult.

The albumins and euglobulins are believed to be responsible for the serum sickness and serum sensitivity that sometimes follow the use of antiserums.

An absolutely pure antitoxin has yet to be developed, but the analytic work of the pioneers in biologic therapy has at last succeeded in simplifying the problem to a certain extent. The Diphtheria Antitoxin now being offered by Parke, Davis & Co. is the most concentrated and the freest from all objectionable features of any heretofore supplied by this house. It is almost water-white in its purity, and contains a minimum, perhaps the irreducible minimum, of albumins and euglobulins.



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## SWEDISH MASSAGE

Massage has taken a place in medicine very much below what it should take simply because in the hands of most so-called masseuses the work is not directed to specific ends. It is mere ignorant rubbing or manipulation of the muscles. In marked contrast to such work is that done by a graduate of the Stockholm Institute of Massage under the direction of a physician for a specific purpose. Such work is done by Mrs. E. Djerf, who solicits work only from physicians, with some of whom in Minneapolis she has worked many years. She may be addressed 1812 Clinton Ave., Tel. So. 3704.

## KENILWORTH SANITARIUM

There are few homes (sanitariums) in this country noted for their personnel and equipment where more satisfactory work is done than at Kenilworth Sanitarium, an institution for the care and treatment of nervous and mental cases, located six miles north of Chicago in a ten-acre park suitably landscaped to serve the recreational requirements of the institution.

The sanitarium was founded by Dr. Sanger Brown, a specialist of high standing in the medical profession, and the resident medical staff is now composed of Ella Blackburn, M.D., Ralph C. Warne, M.D., and Sanger Brown, M.D.

Correspondence should be addressed to Kenilworth Sanitarium, Kenilworth, Ill.

## SERVICE

The Lederle Antitoxin Laboratories take this opportunity to attract your attention to a feature oftentimes overlooked by the general practitioner and druggist. This is the service obtainable from their Northwestern Branch, which is located at 633 Andrus Building, Minneapolis, Minnesota, where they dispense a day and night service on telegraphic

Your Clinical Thermometer gives a visible demonstration of how Pneumo-Phthysine controls fever temperature.

Send for our new brochure "Fever."



Pneumo-Phthysine Chem. Co.  
220 W. Ontario St. Chicago



or telephonic communications. They may be reached at the above-mentioned address at any time by telegraph and their telephone numbers are Atlantic 3749, Day Phone, and Hyland 0810, Night Phone.

Due to the careful attention required for the safeguarding of quality, biological products are seldom carried in large quantities at other points than the manufacturers' branch office or at their wholesale distributors. This fact is oftentimes forcibly brought to the physician's attention just when he is in dire need of biological aid, and we hope this little insert on "Service" will prove of value to the man in such a predicament.

Lederle quality, when combined with the above-mentioned service, gives the medical practitioner in the Northwest unequalled biological efficiency. To those as yet uninitiated, the Lederle Antitoxin Laboratories extend a cordial invitation to make use of their service to the utmost.

### CALCIUM AND PHOSPHORUS

The importance of calcium metabolism is receiving much attention these days. Biologic investigation is constantly finding calcium deficiency to be at the bottom of many systemic disorders, and is also discovering the conditions under which calcium absorption can be improved.

Other recent studies have also demonstrated the part played by phosphorus in pregnancy, lactation, fat assimilation, the ossification of cartilage, rickets, and in muscle contraction. It has also been shown that the lectithins constitute from 10 to 30 per cent of brain and nerve tissue, and that one method of correcting their deficiency is by feeding organic phosphorus.

Eskay's Neuro Phosphates contains calcium glycerophosphates as an acid salt. The prompt and facile absorption of both calcium and phosphorus, especially in acid deficiency, is greatly stimulated by its use. Eskay's Neuro Phosphates is manufactured by Smith, Kline & French Company, 105 N. Fifth Street, Philadelphia, Pa.

### ERGOAPIOL

The disorders of menstruation occupy a large place in the general physician's daily work, and they are treated very largely by some combination of ergotin, apiol, savin, etc., which are found in a single preparation known as "Ergoapiol (Smith)," which is put up in capsules by the well-known house of Martin H. Smith Company of New York. Ergoapiol is indicated in amenorrhea, dysmenorrhea, menorrhagia, metrorrhagia, etc.

### CHRONIC CONSTIVENESS

"If we except England, there is no other land in which chronic constiveness is so prevalent as it is here; and it is equally true that in no other land do people so frequently resort to the indiscriminate and senseless use of medicine in order to move the bowels."

So writes S. G. Gant in his book "Obstipation and Intestinal Stasis."

Many other investigators and medical writers have drawn attention to the increasing prevalence of constipation and the harmful effects which follow the routine use of cathartics and purgatives.

The unfortunate fact to be considered is that cathartics actually tend to produce or intensify the very condition they are expected to treat.

Bernard Fantus points out that cathartics produce constipation in several ways: "Excessive evacuation does not leave enough residue to excite bowel movement the next day. The patient believing, or instructed, that he ought to have a daily bowel movement, repeats the dose; and he is well started on the way to a drug habit. For now, fatigue of the musculature from over-stimulation, or muscular spasm from abdominal irritability of the mucosa, due to excessive irritation, is likely to assert itself, leading to the necessity of progressive increase in dosage and potency of the drug."

The only rational and effective treatment of constipation, whether it be of the spastic or atonic variety, is obviously a re-education of the bowel to normal, regular movement. In a word, restoring *habit time of movement*.

## TREPARSOL

Meta-amino-para-oxy-phenyl-arsonic acid

Oral treatment of  
amebiasis and syphilis.

Literature from  
**George J. Wallau, Inc.**  
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## SPLINTS

The cheapest, most adaptable and  
best splint is the

**Adjustable Fibre Splint**

This splint is made of wood pulp fibre and has been saturated in a solution that renders it easily adjusted by HEATING when it will become semi-plastic and will easily conform to the surfaces after which it will become firm and rigid. It is light, strong, and will not absorb septic matter, is so adaptable that it can be easily and quickly removed to allow massaging of affected parts and readjusted if necessary when replaced. Being non-metallic, X-ray pictures can be taken without removal.

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**Oral  
Hygiene**

For keeping the mouth and throat clean, wholesome, and free from dangerous germs, there is nothing more agreeable and effective than a solution of Pond's Extract—two tablespoonfuls to a half glass of quite warm water used as a mouth wash and gargle every three or four hours. If abrasions with marked pain and soreness are present, these will be promptly controlled and healing follow without delay.

POND'S EXTRACT CO.

**Pond's  
Extract**

New York and London

We are all creatures of habit, and, in the matter of defecation, Nature tends to function in a regular routine fashion. If, in addition to an appropriate dietary regimen and exercise, we can induce our patients to make a daily practice of going to stool at a fixed time, say, immediately after breakfast, we will, in the majority of cases, succeed in bringing about a successful and lasting result in a truly rational manner.

The treatment will vary according to the type of constipation with which we are confronted. Thus the atonic or sluggish variety calls for a bulky diet which must include a sufficiency of indigestible vegetable fiber and other bulk-giving foods.

In the spastic variety the patient should receive an abundance of bland, soft, non-irritating foods and should be induced to relax and avoid, as far as possible, such factors as worry, excitement, overwork, overstrain, which tend to affect his already overwrought nervous system.

In the early stages of treatment, both in atonic and spastic constipation, we can materially shorten the period of re-education of the bowel and aid toward an easier and freer movement by softening the hard-packed stool of the chronic case by means of oil "lubrication."

The term "lubrication" in this instance is open to misconception. It is, of course, absurd to think of lubricating 25 feet of intestinal tract with a tablespoonful of oil. Just try to lubricate the mouth—the mucosa is just the same.

What is desired is an agent which will permeate and mix intimately with the fecal content and produce a moist fecal mass from within. Plain mineral oil has been tried for this purpose but, unfortunately, it possesses certain objectionable features.

It appears to be inert, if taken on an empty alimentary tract. It drops through into the colon and then into the rectum, fails to permeate the feces and "lubricate" thoroughly, and leaks sometimes without the patient being aware of it.

To prove effective as a "lubricant," therefore, the plain oil should really be taken immediately after

meals but here arises a further objection for, when taken at such a time, it tends to coat the food with a film of oil and in that way retard the digestive processes.

Fortunately, it is now possible to make use of all the advantages of plain mineral oil without any of the above disadvantages.

In Petrolagar, petrolatum is exhibited in an emulsified state by incorporation with the indigestible emulsifying agent, agar-agar. The particles of agar act as little sponges, carrying the split-up oil globules into the substance of the feces.

Petrolagar can be taken on an empty alimentary tract and yet prove effective, or it can be taken immediately after food without untoward digestive effects.

Taken on an empty tract, the gastric juices do not attack it. It is broken down in the intestines and separated, the oil permeating the feces intimately and producing a soft, easily moved mass, as can be readily verified by an examination of the stools following the use of Petrolagar.

No ill-effects follow the administration of Petrolagar after food although this is not a convenient method of using. It is interesting to note at this point that Petrolagar has been administered in a mixture with milk or water without untoward results.

Finally, Petrolagar shows its superiority over the plain oil and offers conclusive evidence of better lubrication by its diminished tendency towards leakage.

No matter how fastidious the patient, whether man, woman or child, Petrolagar can be given with full assurance that they will follow the physician's instructions implicitly. With the plain oil they may be apt to give it up in disgust because of its nasty, slimy, oily appearance and taste.

Petrolagar emulsion does not look like an oil, does not taste like an oil. It has been described as having a creamy, pleasant taste, which is entirely free from objectionable oiliness.

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In the majority of cases of  
**ARTERIOSCLEROSIS**  
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**ANIMASA**

has proved effective in America and Europe. Employed as a treatment directed at the cause and as a prophylactic.  
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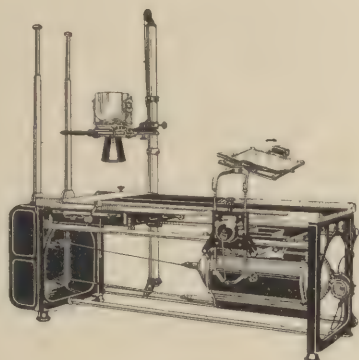
Each Ampoule  
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Sodium Salicylate 15½ grs.  
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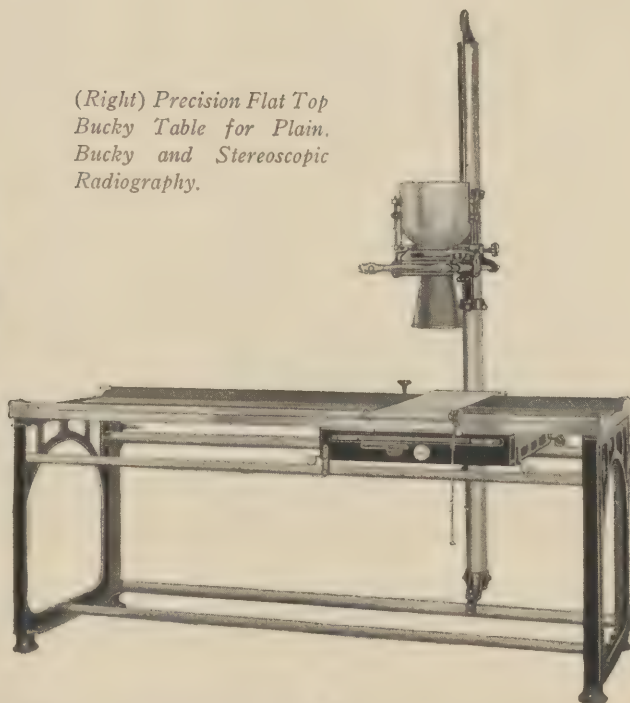


# Acme International Precision Bucky, Radiographic, Stereoscopic and Fluoroscopic Table



*(Above) Same as Bucky Table at Right, except arranged also for horizontal fluoroscopy.*

*(Right) Precision Flat Top Bucky Table for Plain, Bucky and Stereoscopic Radiography.*



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The advantages of the Flat Type Potter Bucky Diaphragm have been proven in thousands of clinical cases all over the world. Not only does it eliminate the awkward trough of the curved type, but when incorporated in a table is ready for plain or Bucky Radiography, without the necessity of lifting an accessory top.

You owe it to yourself to investigate this diaphragm and table before buying, and disinterested users will testify to its efficiency. Sample models are on display at our offices and will be gladly shown to you without obligation.

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## PUBLISHER'S DEPARTMENT

### A NEW GENERAL ANTISEPTIC

A rather remarkable feature of a new general antiseptic, known as Solution S. T. 37 (Liquor Hexylresorcinolis, 1-1,000, S. & D.), is that, while it is actively germicidal and will destroy all forms of pathogenic bacteria on less than fifteen seconds contact, it is non-toxic, safe, and harmless if accidentally swallowed.

It requires no poison label, and is subject to no poison law restrictions. It is also odorless, colorless, stainless, non-corrosive, and is active in the presence of organic matter.

It is manufactured by Sharp & Dohme, and offered in three and twelve-ounce bottles.

### LISTERINE

Asepsis and antiseptics are two great words in modern medicine and surgery. They stand for the work of two of the greatest men in all history,—Pasteur and Lister, men who worked and died within the memory of many living physicians.

The name of the latter of these great men suggested the name of "Listerine" to a firm of men who understood the value of a mild antiseptic and who put this product before the physicians of America, and they, in turn, passed it on to the public.

Listerine is simply an elegant and mild antiseptic, effective as such and universally used as a mouth wash, gargle, etc., where and when a mild antiseptic is required. Its formula is given in our medical dictionaries, and its use is recommended by practically all physicians, for it is no longer, if it ever has been, taboo in the doctor's office.

### AN IMPORTANT ANNOUNCEMENT REGARDING PERALGA, THE NON-NARCOTIC ANALGESIC-SEDATIVE

Schering & Glatz, Inc., of Bloomfield, N. J., and New York, N. Y., announce that for greater convenience in prescribing, dispensing, and administering, in other words, that the physician may still more efficiently "Palliate Pain With Peralga," the three-grain tablets in packages of twelve and one hundred are being discontinued and replaced with six grain tablets in packages of six, twelve, and fifty.

Larger packages for hospital, sanitarium and institution use are available.

A complimentary specimen of the new six grain Peralga Tablet together with helpful suggestions is now being mailed to every physician, and druggists have been suitably instructed.

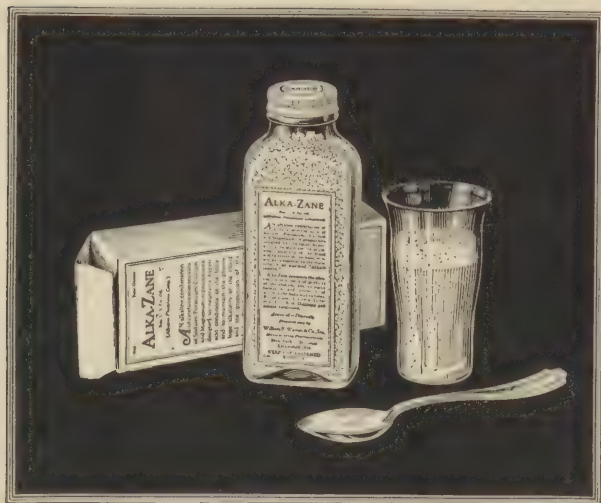
### A VALUABLE AND APPRECIATED SERVICE

Mr. Joseph E. Dahl has been attempting for a number of years to render the physicians of the Northwest a valuable service, and to make this service invaluable he is now prepared to render this service at any hour of the day or night and on holidays. The very nature of his business, the needs of physicians and patients, demands such service, and it is made possible only by a competent man, the telegraph, and telephone, and the modern transportation systems of railway and bus.

Mr. Dahl carries in his storerooms at 722 Marquette Ave., Minneapolis, a complete line of vaccines, serums, and biologicals, and they are ready for shipment or delivery at any moment.

Mr. Dahl is the servant of the physician and by long experience he has learned how to meet the needs of physicians.

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*A pleasant, effervescent granular preparation composed of carefully selected salts of Sodium, Potassium, Calcium and Magnesium in physiologically correct proportions.*

must be adapted to the physiological requirements of the human organism, in order to neutralize excess acid products and restore alkaline balance, without the risk of intoxication.

A trial will promptly convince you of the value of Alka-Zane as antacid, diuretic, and to restore normal alkalinity, in gouty and rheumatic conditions, gastric or intestinal hyperacidity, and in certain skin diseases.

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Johnson & Johnson's newest offering to the medical profession is Duo Liquid Adhesive, which bids fair to revolutionize the dressing of all small wounds and many major ones.

The Duo is applied with a fresh swab around or near the site to be dressed. Then a gauze or lint dressing of suitable size is placed over, and the wound is dressed. If the wound requires ventilation, apply the Duo only in spots around the wound.

Duo is waterproof, and is not affected by secretions or excretions. It adheres firmly to any body surface without previous defatting or other extra preparation. Fine for scalp wounds. Neat on the face, neck and other visible parts, for which patients are grateful.

Write for your sample to-day to Johnson & Johnson, New Brunswick, N. J. You will find a hundred time-saving uses for Duo Liquid Adhesive.

Correspondence with the Sanitarium is solicited.

### THE MINNESOTA SANITARIUM

The Twin Cities as a medical center contains several very excellent sanitariums devoted to the care and treatment of nervous and mental cases and drug and alcoholic addicts. Among them is the above-named institution of which Dr. L. M. Crafts and Dr. Julius Johnson are, respectively, Medical and Associate Medical Directors.

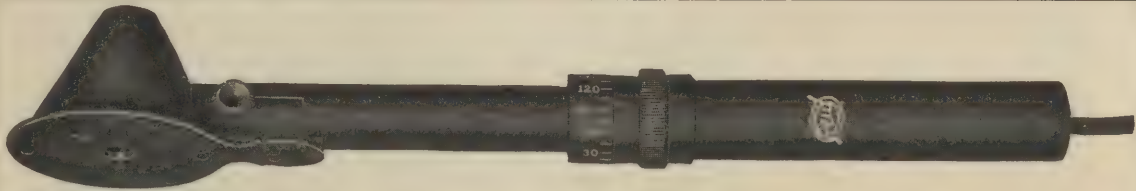
The location and the building of the Sanitarium are especially adapted to the work undertaken, and patients are received to remain under the care of their own physicians, or under the care of the Medical Directors, who are specialists in private practice in Minneapolis and are men of recognized standing in the profession.

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## THE "SPA": A MEDICAL CLINIC

In a book just published by Dr. William Edward Fitch, a distinguished author and a member of the faculties of several schools of medicine, on the subject of "Mineral Waters of the United States and American Spas," the position is taken that many diseases are best treated by hydrotherapeutic measures, and he points out some of them.

Dr. Fitch also maintains that many American Spas are equal to the best in Europe, and he recommends a study of the American Spas and their methods of treatment.

The "Spa" is now offering special rates for November to May, and they invite correspondence covering their work. The institution is prepared to do good work the year round as it has a splendid plant, and can make all of its patients comfortable and their visits to it enjoyable.

Address "The Spa," Waukesha, Wis.

### A \$5.00 BARGAIN

Messrs. Sharp & Smith, the old-established Chicago house, who supply the Northwestern physicians, surgeons, and hospitals with no small part of their surgical supplies, offer a highest grade guaranteed electric heating pad at a real bargain, namely, \$5.00.

This pad carries the guarantee of this responsible house, and that means that they offer a real bargain.

### "BANK HERE"

The above two words constitute the cordial invitation that the Minnesota Loan & Trust Company of Minneapolis extends to every physician in the Northwest, and it means much to the physician who accepts it. As a trust company this organization offers to medical men a service of which they have long stood in sore need, for, as a trust company, their business is to render their customers

expert business advice and aid in the handling of their business affairs, even after death if appointed as trustee. They also do a general banking business and pay interest on checking accounts, thus making their relations to physicians more attractive.

The fact that very many of our best business men now patronize trust companies to an extent never known before is conclusive proof that they are worthy the patronage of men, like physicians, who are not so familiar with large affairs. For instance, the trust companies have almost wholly supplanted other forms of administering estates; and this is because the trust company is best qualified to do such business, is held to the strictest possible responsibility by law, and its mode of work is most economical.

The Minnesota Loan & Trust Co. (405 Marquette Ave., Minneapolis) will give any physician all the information he wants about its varied lines of business, and it cordially invites you to "Bank Here," that is, at the above address.

### For Professional Service

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Guaiacol 2.6, Formalin 2.6,  
Cresote 13.02, Quinine 2.6,  
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Glycerine and Aluminum Sulfate,  
qs 1000 parts,  
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## FOR RELIEF OF HYPERCHLORHYDRIC SYNDROMES

The subjective symptoms of discomfort which accompany the hyperchlorhydric syndrome, such as a sensation of burning in the pit of the stomach, acid regurgitation, pain, vomiting, sialorrhea, may be promptly relieved by the administration of Alka-Zane in doses of a teaspoonful in a glass of water, or as the attending physician may think best.

After subsidence of the momentary discomforts, it is generally advisable to continue the use of Alka-Zane in the above dosage one-half hour after meals for several days, until the urine shows a neutral or slightly alkaline reaction. In this manner it is possible for Alka-Zane which contains in correct proportion the alkaline or "buffer" salts, to rebuild the buffer reserve, needed for normal balance.

Because of its palatability and effectiveness, Alka-Zane is widely prescribed wherever alkaline medication is needed. Samples and literature may be obtained from William R. Warner and Company, Inc., 113 West 18th Street, New York City.

### THAT EVERLASTING LEECH

Drugs may come and drugs may go, but shall the leech hang on forever? A mere worm, without a backbone, he sticks closer than a blood brother. He becomes attached to perfect strangers who let him live on them, and refuses to let go until he is full and ready.

The use of the leech, although it is almost over in these days of antiseptics, still hangs on. Wholesale drug houses continue to import the suckers, more of which are being born every minute in Sweden, and a search of certain quarters of any large city will turn up a big jar in musty little pharmacies—the home of *Hirudo*.

Many physicians think because so little is heard about leeches these days, that the creatures retired from practice when the World War came. Although the unsettled state of Europe stopped the leech trade for years, it has again taken hold.

Compared with what it once was, leeching is such a rare method of treatment that it may to all intents and purposes be called obsolete. The astonishing thing is, however, that there are persons who still employ it. Of all the customs which date back for centuries in the medical profession, it is the most persistent. The medieval name for physician is leech, and there seems to be a lingering belief that there was some kind of a partnership between the doctor and the little living blood-letting. Some authorities say that the original name of the parasite was not leech, at all, but lyce, and that when the public confused him with disciples of the healing art, that he never tried to remove the popular impression. The so-called medical leech is *Hirudo medicinalis* and he applies himself to humans; while his big country cousin, the horse leech, lingers in streams and troughs and gets into the mouths of the equine breed, and starts all kinds of trouble and runaways. The North American leech is not adapted for systematic blood sucking, as it lacks the required clinging ability. The South American leech, which hangs on the branches of trees and never goes near the water, is also unsteady in its habits and painfully obvious in its methods.

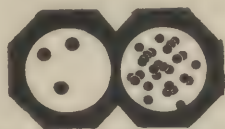
The regular leech is the most enterprising of his tribe. He has no legs, but he gets to places all the same. When he is in the water he wriggles his ringed body in an act that passes for swimming. Whenever he is on land, he steadies himself on an air-sucker in his tail, throws his body forward, gets a new hold with his front sucker, lets go at the rear, and draws himself up; and so on until he has reached a good place on which to operate. He is out for blood, and does not deny it. As a vampire, *Hirudo* can be happy with a fly or a fish, but he is very fond of scraping acquaintance with swimmers of the human species. He has a three-piece jaw all ready for persons in two-piece bathing suits. After he has done a little pricking in triplicate, he grapples his victim fore and aft and settles down to steady pumping.

## Pond's Extract

POND'S EXTRACT CO.  
NEW YORK AND LONDON

## Follicular Tonsillitis

POND'S EXTRACT is of exceptional value for relieving the acute discomfort and pain of Tonsillitis. Used as a gargle every hour—a tablespoonful to a half glass of hot water—it promptly controls the local inflammatory process and thus enables the tissues to restore normal conditions.



## DESCHIENS' SYRUP

Of Hemoglobin

Your patients with anemic tendencies will benefit by taking Deschiens' Syrup. It is a drugless treatment, an excellent example of opotherapy. Prescribed a tablespoonful in water before or after each of the two principal meals.

Samples and Literature

GEORGE J. WALLAU, Inc.

6 Cliff St., New York, N. Y.

## SPLINTS

The cheapest, most adaptable and best splint is the

*Adjustable Fibre Splint*

This splint is made of wood pulp fibre and has been saturated in a solution that renders it easily adjusted by HEATING when it will become semi-plastic and will easily conform to the surfaces after which it will become firm and rigid. It is light, strong, and will not absorb septic matter, is so adaptable that it can be easily and quickly removed to allow massaging of affected parts and readjusted if necessary when replaced. Being non-metallic, X-ray pictures can be taken without removal.

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Niles, Mich.

His methods, when he is requested to draw blood, instead of being swatted for so doing, are very simple. He is taken out of an ordinary vial, or forced out of a tube by a piston, and laid upon the skin. If he is not very hungry or a little stage-struck, a drop or so of blood, or of sweetened water, induces him to lay hold. When little Hirudo has had all his bulging skin will hold, he usually drops off of his own accord, but if he is slow in quitting, a pinch of salt sprinkled on his head induces him to resign. Even before Dr. Louis Pasteur told the world about germs, the leech was suspected of not living a sterilized life. Although he feeds on animate creatures, not on carrion, he is likely to carry about with him some undesirable elements. He may have some diseased blood in his system, although it was fresh enough when he got it. On the East Side of New York City, leeches are sometimes kept in boxes of mud and get cold baths before going into action. Whether they are entirely germ free and simon pure or not, they often leave irritating substances in a wound, for they secrete a liquid which prevents the blood from coagulating.

In order to have an appliance which could be sterilized without its shriveling to nothing, for leeches are not supposedly fireproof as salamanders are reputed to be, a machine of glass and metal was invented, known as the mechanical leech, which has a limited use.

With the progress of medicine the actual removal of blood from the human body for the purpose of relieving congestion has almost disappeared. Leeches, living and artificial, are after all relics of the past, which cling because of an age-old tradition. It has been found that venesection, leeching, and all forms of blood-letting are enervating and harmful, and unnecessary. The application of a hygroscopic, osmotic preparation, sterilized, free from all contamination, such as is ANTIPHLOGISTINE, serves the purpose of relieving inflammation and congestion by simple mechanical means, without danger of debility on one hand and of infection on the other.

It is hard to foretell when the leech will relinquish his practice permanently. There are customs which date back to the Dark Ages still managing to survive. Venesection appears not only in musty old volumes, but in some modern works. However, the lure of the leech is passing, and certain it is that its spell has long since been broken by bloodless phlebotomy.



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MENORRHAGIA  
METRORRHAGIA  
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DOSE: One to two capsules three or four times a day. < < <

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In the majority of cases of  
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and HYPERTENSION  
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Indicated in Gout, Arthritis, Sciatica, Rheumatism and other Streptococcic Infections. Promptly relieves the pain and stiffness of Rheumatism.

Each Ampoule  
(20 mil.) Contains

{ Sodium Iodide 15½ grs.  
Sodium Salicylate 15½ grs.  
Colchicine 1/100 gr.  
In a sterile isotonic solution

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## PUBLISHER'S DEPARTMENT

### SOMETIMES OVERLOOKED

Too many physicians, we fear, neglect to specify the manufacturer when prescribing such rather common but exceedingly useful products as, for example, Cod-Liver Oil. Yet differences in quality are just as marked in these preparations as in biologicals or any of the more intricate synthetic chemicals.

Taking Cod-Liver Oil as a case in point, there are of course a number of good brands on the market; but one of them contains **not less than 13,500 vitamin "A" units and not less than 2,000 vitamin "D" units in each fluid ounce.** The preparation referred to is Parke, Davis & Co.'s Standardized Cod-Liver Oil. And surely there must be some connection between the high vitamin content of this product and the fact that Parke, Davis & Co. have been carrying on research work in nutritional chemistry for years!

Yes, specification surely pays, all down the line.

### UNGUENTUM EUCALYPTI COMPOSITUM (V-E-M)

V-E-M is a mildly antiseptic menthol-eucalyptol composition put up in liquid or ointment form, and it is also furnished in combination with boric acid, camphor, ichthyol, and zinc stearite, respectively; and, if desired, an admirable applicator for spraying the nasal passages reaching the post-nasal cavity and throat is furnished. The Schoonmaker Labora-

tories, Inc., of Caldwell, N. J., have given the profession a combination of drugs, most of which are in well-nigh universal use for application to the nasal air-passages. They will be pleased to furnish samples to physicians.

### THE HARROWER LABORATORY, INC.

The Harrower Laboratory, Inc., of California, is doing a large work in organotherapy, and the physician who has not kept informed of the investigations and productions of this Laboratory hardly knows the late accomplishments of organotherapy, which has wholly passed the experimental stage and is no longer considered a mere fad; indeed, its work has well-nigh passed even the most extravagant claims of its enthusiasts.

One can best post himself on the work organotherapy has accomplished by reading some of the articles on this subject published in the leading medical journals of America and the literature of such men as those who conduct the work of the Harrower Laboratory, which will be cheerfully sent free to any physician who asks for it. In such literature one gets a full description of the work this laboratory is doing and a list of the principal journal articles by our leading men on the general subject.

The headquarters of the Harrower Laboratory are at Glendale, Calif., with branch offices in Atlanta, Baltimore, Boston, Chicago, Dallas, Kansas City, New York, and Portland (Oregon). Any of these offices will welcome correspondence with physicians, especially those interested in organotherapy.

## Post-Maternity Cases

Pregnancy and parturition entail a serious drain upon the human organism, especially upon the nervous system. In post-maternity cases

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is of particular value, because it furnishes calcium and phosphorus in the closest possible form to that in which they exist in the nervous system. It supplies these needed basic elements, tones the nervous system and acts as a true nerve-cell reconstructive.

## THE CHAMBERLAIN SANITARIUM AND HOSPITAL OF SOUTH DAKOTA

An institution like the above is an asset of almost inestimable value in an agricultural community, and its value will be greatly increased following the marvellous prosperity that has come to the whole state of South Dakota through abundant crops.

This year should be a year of great recuperation in the large section of the state served by this well-conducted sanitarium and hospital with its modern equipment for high-class work, including its splendid training school for nurses and its new departments of physiotherapy and its clinical and x-ray departments.

It has a capacity of 75 beds and uses 35 nurses for its staff of physicians and surgeons.

Drs. C. P. Farnsworth and R. A. Crawford are its Medical Directors.

### PARIOGEN TABLETS IN VAGINAL ASEPSIS

The manufacturers of Pariogen Tablets have received many letters from physicians endorsing this product. One prominent physician recently stated that "Pariogen Tablets are the safest, cleanest and most effective antiseptic for vaginal use of any preparation I have ever used."

The active ingredient (sodium paratoluene-sulfon-chloramide) has a phenol coefficient of approximately fifty. Notwithstanding this high germicidal effectiveness the other ingredients are so skillfully combined that when a Pariogen Tablet is properly introduced it will cause no irritation whatever to healthy mucous membrane. It dissolves in the natural secretions in about one minute, and the solution thus formed possesses remarkable bacteri-

cidal and disinfectant properties for a period of from forty to fifty minutes.

When the membrane is particularly sensitive due to soreness arising from inflammation, discharges, abrasion, or other causes, the first one or two applications may, in some instances, cause a slight irritation. Continued use will greatly assist the parts to heal, and only the most beneficial results will follow.

The American Drug & Chemical Company, of Minneapolis, the manufacturers, will be glad to send physicians and registered nurses regular size tube of Pariogen Tablets for clinical study. Literature giving bactericidal tests will also be sent.

### IN NINE CASES OUT OF TEN

The old idea that a cathartic is a cathartic and that in most cases "any old thing will do" has fortunately been exploded, and we select our laxatives today with due regard for individual idiosyncrasies and the general condition of the case.

In nine cases out of ten, though, it is safe to prescribe Agarol without further thought. For Agarol combines the advantages of lubrication with the definite action of phenolphthalein in inducing peristalsis.

As a rule one or half a tablespoonful, taken on retiring, will secure complete evacuation the next morning, without the griping which frequently accompanies the harsher cathartics, or the unpleasant "leakage" of mineral oil alone.

Physicians interested in testing this efficient product can obtain samples and literature on Agarol by addressing William R. Warner and Company, Inc., 113 West 18th Street, New York City.

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## DIATHERMY

The use of diathermy, or heat applied to the body tissues, is no more a fad than the use of heat produced by a hot-water bag or an electric pad. Diathermy has come into so general use because the apparatus for its application has been so well developed that the physician knows just what to expect when he begins its use; but it is very important that the apparatus he is to use be selected with great care.

The Victor X-ray Corporation has developed a diathermy machine, called the Victor Vario-Frequency Diathermy Apparatus by the use of which the operator gets any combination of frequency and voltage desired. The electrical engineers of the Corporation have worked out the problems involved so thoroughly that one needs not be an expert to produce the effects he seeks. The physician knows what to expect from diathermy in use, for instance, on the lung, the elbow, the wrist, etc., and he is no longer troubled over frequency and voltage. The Victor Vario-Frequency Apparatus has solved these problems, and thus has put into the hands of the general practitioner a means by which he can use diathermy to the fullest extent wherever the application of heat to the tissues of the body, deep or otherwise, is indicated.

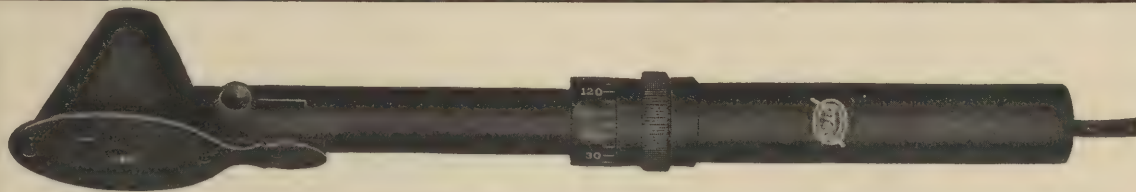
The Victor Corporation, of Chicago (2012 Jackson Boulevard) or of Minneapolis (733 Marquette Ave.) will gladly give all information desired. An illustration of this apparatus and some of its applications will be found on another page.

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## THE EITEL HOSPITAL OF MINNEAPOLIS

Last month the citizens of Minneapolis and several thousand hospital workers drawn hither heard much about hospitals and their work, filling the air with praise of successful hospitals. Of one such we want to speak herein, and it is the Eitel Hospital of Minneapolis.

The Eitel is doing, and has done for a good many years, a really great work. Though a private institution it has become a community affair, as most hospitals must become in their service to the public.

The Eitel is open to all physicians in good standing and to patients who are treated by their own physicians.

The Eitel's laboratories and training-school make the equipment of this splendid and beautiful hospital a place worth visiting, and, moreover, visiting physicians are always welcome.

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# V-E-M

(Unguentum Eucalypti Compositum)

This mildly antiseptic menthol-eucalyptol ointment, with the aid of its special APPLICATOR, is thrown high against the turbinates, where it melts at the temperature of the body and clings for hours, completely covering the outer walls of the nasal passages, reaching the post-nasal cavity and the throat.

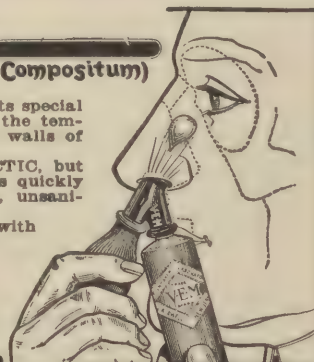
Used once or more daily it not only acts as an efficient PROPHYLACTIC, but spreads a protective oleaginous film over the exposed membranes. Fluids quickly leak out, and pushing ointments up the nose with the finger is unsafe, unsanitary and inefficient.

Furnished in collapsible tubes, with Applicator. Also in combination with Boric Acid, Camphor, Ichthyol and Zinc Stearate, respectively.

Samples to Physicians on Request

### SCHOONMAKER LABORATORIES, INC.

• Caldwell, • New Jersey, •





## THE THERAPEUTIC VALUE OF CHEMICAL FOODS

Some fundamental facts in medicine, and the fundamental conclusions of great medical writers drawn from such facts, are often found so clearly and so succinctly set forth in a pamphlet as to be of more real interest and value than can be found in elaborate treatises on the subject. An illustration of this is found in a pamphlet of sixteen pages with the above heading and issued by the Fellows Medical Manufacturing Company, Inc., of New York.

This pamphlet opens with a bibliography composed of twenty-five citations from standard writers, American and foreign men of distinction, and from journals of highest repute, such as the *Journal of American Medical Association*, and the *Presse Médicale* of Paris. Every citation in this pamphlet, from McCollum to Holmes, creates in the physician who reads it a desire to turn to the book or article cited to know the truth "about the nutritional values of the various kinds of food, both organic and inorganic."

The pamphlet of the Fellows Company is a worth while one even though it points out with considerable emphasis the fact that the Syrup of Hypophosphites (Fellows) contains in acceptable form a combination of the "chemical foods," together with the dynamic agents, quinine and strychnine.

### PROPHYLAXIS OF INFANTILE SYPHILIS

At the International Conference on Hereditary Syphilis held in Paris, October 5th to 7th, 1925, Marcel Pinard, member of the Academy of Medicine, presented a report on the prophylaxis of infantile syphilis, an abstract of which appeared in *La Presse Médicale*, October 17, page 1,379. In speaking of Treparsol he states, "in doses of 1.5 cgms. per kilo weight four days a week for periods of three weeks, it exhibits a rapid action on the cutaneous and mucous manifestations. It succeeds in producing a negative Wassermann but it is not yet

sufficiently long on the market to have determined the durability of the treatment."

Since the above has been reported, many other references have appeared in the press and the evidence accumulated from private practice indicates that Treparsol is to take rank with the authentic therapeutic measures now used successfully in treating syphilis. Literature is available by addressing George J. Wallau, Inc., New York, N. Y.

### DISEASE PREVENTION

Not long ago an English divine startled the world by stating that science had made such progress that further endeavors along this line should stop until society was permitted to overtake it.

Research and scientific activities cover a wide field. Surely the learned gentleman must have overlooked the subject of disease prevention, must have been unaware of the accomplishments of such discoveries as Insulin, Diphtheria Antitoxin, Poliomyelitis Antistreptococcic Serum, Rabies Vaccine, and the newer development of an agent which is doing so much to rob scarlet fever of its terrors,—Ricinoleated Antigen, Scarlet Fever, Immunizing, Lilly.

Ricinoleated Antigen is particularly seasonable. A few words about it are timely. It is the agent for active immunization of unexposed susceptibles against scarlet fever at the time of the outbreak or during an epidemic. Immunity is said to be established in from five to eight days. Reactions, it is claimed, are negligible when the antigen is properly given. Another product worthy of note is Scarlet Fever Streptococcus Antitoxin, Lilly, a potent, refined Lilly biological used for passive immunization.

The conquest of disease and the giant strides accomplished through preventive measures are worthy of wide recognition. There seems to be no ground for believing that research in any line should be curtailed. In the field of medicine one has but to compare the empirical use of commonly prescribed drugs of a half century ago with the present trend in medicine, to realize how much mankind has benefited through laboratory and clinical research.

# Pond's

## Nasal Congestion

The following is an excellent formula for promptly relieving congestion and distress of nasal colds:

**R** Adrenalin Chloride (1-1000) m xx  
Pond's Extract. oz. 1  
Aq. destil q s ad oz. iv

M et Sig:—Spray into nostrils two or three times a day.

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# Extract

# TREPARSOL

Meta-amino-para-oxy-phenyl-arsonic acid

Oral treatment of  
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Literature from

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The cheapest, most adaptable and  
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This splint is made of wood pulp fibre and has been saturated in a solution that renders it easily adjusted by HEATING when it will become semi-plastic and will easily conform to the surfaces after which it will become firm and rigid. It is light, strong, and will not absorb septic matter, is so adaptable that it can be easily and quickly removed to allow massaging of affected parts and readjusted if necessary when replaced. Being non-metallic, X-ray pictures can be taken without removal.

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## THE CONTROL FACTOR IN THE TREATMENT OF FEVER

The vital importance of reducing excessive fever temperature to within safe limits—and in a manner which keeps it under constant control—cannot be overestimated. It must be remembered that fever, in the sense of excessive temperature, is merely a symptom, that it is Nature's reaction to insult and that a moderate degree of fever is of assistance to the organism in combating the underlying disease.

Only, therefore, when the temperature rises to dangerous heights does it become necessary to control it and bring it within the safety zone.

For this purpose three methods of treatment are available. They are the oral administration of drugs, hydrotherapy, and the endemic application of antifebrile agents.

Of these, applications to the skin are usually preferred to oral administration because of the danger of gastric and digestive upset which may result from the latter and the impossibility of accurately controlling the response to the medication.

Hydrotherapy, which includes the application of sponge baths and cold douches to the skin, is frequently employed because of its property of producing heat dissipation.

Those, however, who have tried the endermic administration of antifebrile drugs, in the form of Pneumo-Phthysine, continue to use it because it combines convenience, safety and control in the reduction of excessive temperature.


Pneumo-Phthysine is an emplastrum containing guaiacol, creosote, quinine, formalin, and methyl salicylate in a kaolin base.

In applying it to the body it should first be heated to body temperature and then a thin layer spread on a piece of white cloth or gauze. The skin over the part, usually the abdomen, is first bathed and dried and then the Pneumo-Phthysine emplastrum applied.

A distinct drop in temperature will be observed in a very short time and a uniform, steady reduction will continue until the emplastrum is removed. In this manner it is possible to accurately control

the extent of reduction within the safety zone. The fever reduction is so positive that you can measure the efficiency of Pneumo-Phthysine with your clinical thermometer.

The Pneumo-Phthysine Chemical Co. issues a very interesting and attractively printed, illustrated booklet which describes the rationale and therapeutic indications for the use of the emplastrum, Pneumo-Phthysine, in the control of fever.



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Indicated in Gout, Arthritis, Sciatica, Rheumatism and other Streptococcic Infections. Promptly relieves the pain and stiffness of Rheumatism.

{ Sodium Iodide 15½ grs.  
Sodium Salicylate 15½ grs.  
Colchicine 1/100 gr.

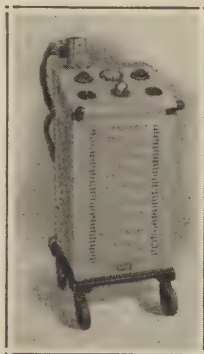
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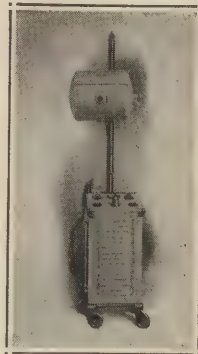




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## PUBLISHER'S DEPARTMENT

### BOOKS FOR THE DOCTOR OR THE NURSE

If you think of books you think, at the same time, of the book-seller; if you think of the seller of professional books, at least of medical books, you think of Arthur W. Isca, of 210 South Seventh Street, Minneapolis, whose business it is to learn all about such books and to furnish such information gratuitously to the doctor or nurse who is interested.

Tell Mr. Isca what you want to know or to purchase, and you will get the information, and if you buy a book from him you will get the right price.

### THE PHARMACOLOGY OF COD LIVER OIL

Much research work has been done in recent years with cod liver oil, but its significance has perhaps been underestimated because of the difficulty of co-ordinating the various conclusions. This difficulty has been aggravated by reason of the mass of the literature reporting it, and the widely different sources from which it has appeared. These facts have made it well-nigh impossible for anyone,

other than the specialist investigating the properties of cod liver oil, to familiarize himself with the present knowledge concerning it.

Cod liver oil was introduced into the *Materia Medica* of England as early as 1771 for the treatment of rickets, rheumatism and sciatica, but it is only within the last decade and a half that the real reasons for its efficacy have been understood. The discovery of vitamins and the fact that at least two of them are potently present in cod liver oil gave impetus to the investigation. Finally, increasing knowledge of the control exercised by the oil over the metabolism of calcium and of phosphorus in the body added the force of scientific reason to what had formerly been only an empiric use.

Recently, however, the literature on the subject has been carefully surveyed and the findings correlated and summarized in an interesting little brochure, intended for the busy physician, entitled "The Pharmacology of Cod Liver Oil." A significant bibliography is appended. The work has been done by a reputable scientist and is published by the Research Laboratories of Smith, Kline & French Company, Philadelphia. Copies may be had upon request to the publisher.

# Pond's

## Nasal Congestion

The following is an excellent formula for promptly relieving congestion and distress of nasal colds:

**R** Adrenalin Chloride (1-1000) m xx  
Pond's Extract oz. 1  
Aq. destil q s ad oz. iv  
M et Sig:—Spray into nostrils two or three times a day.

POND'S EXTRACT CO., New York and London

# Extract

## Decrease of the "Alkali Reserve"



*A pleasant, effervescent granular preparation composed of carefully selected salts of Sodium, Potassium, Calcium and Magnesium.*

is directly responsible for a large proportion of those ills which are manifestations of hyperacidity. Effective alkaline treatment is imperative. Alka-Zane, antacid and diuretic, promptly neutralizes the excessive acid products and rapidly restores the normal alkalinity of the blood.

*A brief trial will demonstrate the efficiency of*

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## INFRA-RED-LAMPS

The C. F. Anderson Co., Inc., located at 212-214 South Seventh Street, in Minneapolis, are calling the attention of medical men to Zorex that sets a new standard of excellence in their Infra-red-lamps, which give great satisfaction, and the floor stand model of which sells for \$25.00. Any one interested in work of this character cannot fail to be pleased with this new model.

The C. F. Anderson Co. are wholesalers of surgical and hospital equipment of all kinds, and they cordially invite an inspection of their show-rooms and a trial of their service, which they believe to be unexcelled; and they guarantee their prices to be as low as the quality of anything they sell will warrant.

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Mrs. E. B. Ridout, who recently took into association with her Miss I. Crawford Anderson, recently from London, England, has had twenty years' experience in giving massage in a purely professional way, namely, under the supervision of physicians who know both the possibilities and the limitations of massage treatment. A lack of knowledge of either may be disastrous to the patient, while life may be saved by such knowledge on the part of the physician and such skilled experience on the part of the masseuse.

The work of Mrs. Ridout and Miss Anderson cannot be commended too highly.

They have the utmost confidence of many leading Minneapolis physicians, and have long worked under their supervision.

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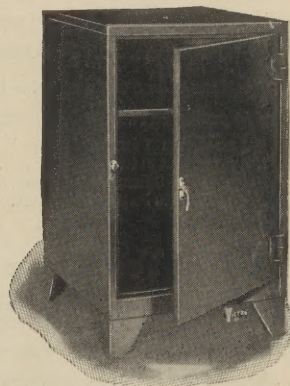
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*to combat*

# DIPHTHERIA

**Prevention—Treatment—Susceptibility**

## **Super-Concentrated Diphtheria Antitoxin**

For curative treatment and immunization of contacts.

An antitoxin of very low protein content, small bulk, highly refined, which minimizes serum sickness, and is rapidly absorbed.

Less bulk—less pain—quicker results.

DOSAGE—1000, 3000, 5000, 10,000, 20,000 units.

*Supplied in Mulford Perfected Syringes,  
ready for immediate use*

## **Diphtheria Toxin-Antitoxin Mixture**

To produce a lasting immunity, which develops in about eight weeks and continues effective for some years, probably for life.

Immunization of children of pre-school age and up to 10 years is recommended.

DOSE—3 injections of 1 cc each, at 7-day intervals.

*Supplied in packages containing*

- 3-1 cc vials ( 1 immunization ).
- 30-1 cc vials (10 immunizations).
- 10 cc vials ( 3 immunizations ).
- 30 cc vials (10 immunizations).

## **Schick Test Toxin**

To determine susceptibility to diphtheria.

DOSE—0.1 cc injected between the layers of the skin.

*Supplied in packages containing  
sufficient material for 50 tests*



**H. K. MULFORD CO.**

Philadelphia, U. S. A. 77556

**Mulford**  
THE PIONEER BIOLOGICAL LABORATORIES

## A WINTER TONIC FOR THE ELDERLY

Is a tonic ever seasonable—seasonable as to the time of year of administration or as to the age of the patient? At first blush one would say no; after proper consideration of the question, one must answer yes. Both conditions produce results in the condition of the patient that call for certain results which follow careful medication. A pleasant and mild tonic may be given at any time, and it will be helpful at any time; but it may not be needed as much at one time as at another or as much by one patient as by another.

Angier's Emulsion, for instance, has properties that especially fit it for the condition of elderly people who feel the depressing effects of severe winter weather. It speedily relieves catarrhal effects of cold and inclement weather by its action upon the mucous membrane of the bowels. It is at once mild and invigorating.

It is an emulsion that produces practically all the good results expected from the ingredients known to compose this preparation and given in its formula on every container.

A sample, which will be furnished free upon request, will convince any one. Address the Angier Chemical Co., Boston, Mass.

## AN IMPROVED ERYSIPELAS ANTITOXIN

The combined concentration of antitoxic and antibacterial properties in one and the same serum is a new achievement, recently attained as a result of the research efforts of one of the large biological producers.

Usually, in the process of concentrating antitoxic serum, all the bacterial antibodies are lost, because the process ordinarily used to separate the antitoxin-bearing globulins fails to carry the antibacterial bodies along to the end product.

The fact that some diseases are both toxic and bacterial in nature emphasizes the importance of having a serum of this type available for their treatment. Erysipelas is such a disease and in producing an Erysipelas Streptococcus Antitoxin in concentrated form and still possessing both antibacterial and antitoxic substances, the Mulford Laboratories have made an important contribution to the art.

Readers desiring to learn more about the features of this improved form of Erysipelas Antitoxin may obtain further information by addressing H. K. Mulford Company, Philadelphia, Pa., and making mention of this Journal.

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Campho-Phenique is composed of camphor and phenol (carbolic acid), two of the oldest and most generally used drugs of yesterday and to-day. The properties of the two drugs are combined in a very acceptable manner in liquid and powder form, and so combined as to meet the needs of the general practitioner, as well as the specialist. Its antiseptic power is that of phenol, and the combined healing power of phenol and camphor is unexcelled in all forms of wounds that can be reached by the powder or liquids whether the wound is fresh or infected.

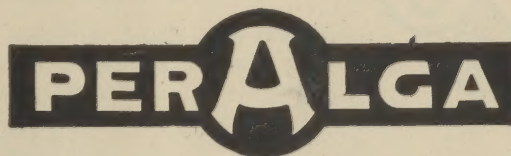
Samples and literature will be gladly sent to any physician upon request made to the Campho-Phenique Co., St. Louis, Mo.

## ACIDEMIA AND HYPERTENSION

One of the common causes of acidemia lies in excess consumption of the carbohydrates contained in starches, sweets, and alcoholic beverages. The reason for this is obvious if we stop to consider that in patients who consume large quantities the dietary ratio of proteins to carbohydrates changes from the normal 1:4 to as high as 1:15. It has been found that there is a close relationship between carbohydrate acidemia and hypertension which has been called by some writers a "syndrome following in its wake." Commenting on this and on the same picture in nephritis, many sufferers from which are addicted to alcohol, some observers have shown that with the administration in such cases of a pure protein diet and such remedial agents as would promote the increase of the alkaline reserve, the blood pressure fell rapidly, while resumption of a carbohydrate diet led to renewed hypertension.

Therefore in many instances of high blood pressure (excepting those of essential hypertension) progressive practitioners have found it wise to administer Alka-Zane, the rational antacid, as adjuvant treatment in connection with dietary and routine measures. The inherent advantage of Alka-Zane over the ordinary alkaline salts lies in its rational composition, containing all the buffer salts in physiologically correct proportions. To physicians who have not had occasion to use Alka-Zane in their practice, the manufacturers, William R. Warner and Company, Inc., 113 West 18th Street, New York City, will be glad to forward upon request a liberal test supply and complete literature.

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For greater convenience in prescribing, dispensing and administering,

In other words, that you may still more efficiently "*Palliate Pain With Peralga*".

We have discontinued the **three grain** Peralga Tablets in packages of twelve and one hundred and replaced them with **six grain** tablets in packages of six, twelve and fifty.

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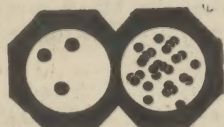
## FAILING FUNCTIONAL ACTIVITY

Whatever other elements enter into states of failing functional activity in men, there frequently are evidences of deficiency in the internal secretions. Only a small proportion of the patients suffering in this manner owe their condition to excesses and conscious indiscretions.

The pressure of modern life tends to exhaust the vital forces, so that many men show evidence of early aging. Some might be restored by rest alone. But among these are not a few to whom the leisure necessary for rest seems an utter impossibility. A majority probably suffer from a more or less clearly

marked congenital endocrine imbalance. What these men need is a gland combination which by substitution and homostimulation not only will produce a normal physical and mental condition but also will set in motion the restorative processes which should make those conditions permanent.

Viriligen (G. W. Carnrick Co.) is a product composed of scientifically combined thyroid, pituitary, suprarenal, and gonadal substances. The results of the use of this remedy have been surprisingly uniform and satisfactory. It is prepared both in tablets and ampoules. The latter are recommended where quick results are essential to the psychic condition of the patient.



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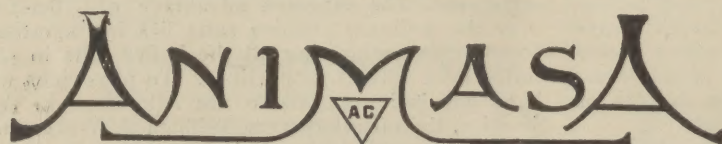
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Your patients with anemic tendencies will benefit by taking Deschiens' Syrup. It is a drugless treatment, an excellent example of opotherapy. Prescribed a tablespoonful in water before or after each of the two principal meals.

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